SOMETHING FROM ANOTHER:

EXAMINING RELATIONSHIPS BETWEEN 14N STRUCTURED ANALYTIC TECHNIQUE SKILLS AND LEADERSHIP SKILLS

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Dedication

For Lettice. Thank you for your patience and love.

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Abstract

What does it take to improve leadership skills of an Air Force intelligence officer, especially given manning constraints? Can it be brought about by teaching structured analysis techniques? In this study I administered a pre-survey to my subjects, intervened with three analysis techniques, each applicable to a different necessary intelligence officer leadership areas. Then I administered a post-survey. I also interviewed three of my subjects to get more detailed opinions on my study and hypothesis. I concluded that this is a possible linkage between the learning of structured analytic techniques and perceived leadership skills among Air Force intelligence officers.

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CHAPTER I

INTRODUCTION

The Air Force needs better intelligence officers.[1] Sure, it has capable intelligence officers, but it needs to develop even better ones, for two main reasons. First, the Air Force Intelligence Officer community (commonly called by their Air Force Specialty Code, 14Ns) continuously faces smaller-than-desired numbers. As depicted in Appendix A, the 14N ranks of captain, major, and lieutenant colonel are all undermanned. This results in heavier workloads and increased demand for more leadership skills earlier on in a 14N's career. The Lieutenant ranks are also depicted in Appendix A. And although not undermanned (and, perhaps, because of it) they are often expected to fill in the roles typically assigned to captains and sometimes even majors. Appendix A also shows that of the 20 core 14N year groups, the Air Force has met the sustainment requirement for only five of them. This means the Air Force is not keeping enough 14Ns. It demands "more with less" from 14Ns, and often right away. And though having enough 14Ns does not automatically equal having better ones, it does possibly give the Air Force more leadership potential, if trained the right way.

I will detail the second reason more thoroughly later on in this paper, but it is sufficient to say that not enough 14Ns have the skills necessary to lead in the joint warfare environment.

[1] The professional journal the will serve as the model for the documentation of this thesis is "Studies in Intelligence".

These problems relate directly to the topic of leadership and how to prepare young intelligence officers for it most effectively and efficiently.

Leadership is the topic of an immense body of writing and research. To ask what a 14N does suggests many possible responses; there is no short answer. However, it will be helpful to being with how the Air Force defines leadership. According to Air Force Doctrine Volume II, it is defined broadly as "the art and science of motivating, influencing, and directing Airmen to understand and accomplish the Air Force mission in joint warfare."[2] Further, the Air Force defines 14N leadership as "[leading] Airmen through the [intelligence] process".[3] That is a broad statement, and for good reason. I want the reader to grasp the scope of a 14N's responsibilities. A 14N must leave their training with the ability to do many things and go to many different assignments. As a former 14N instructor and student, I have seen newly trained lieutenants immediately lead dozens of airmen at signals intelligence[4] or DGS units[5] where their primary role is administrative and leadership-oriented. Others I have witnessed fulfill near polar opposite duties at flying or special operations unit support missions, where

[2] Lemay Center for Doctrine, Air Force Doctrine Volume II: Leadership," https://doctrine.af.mil/download.jsp?filename=Volume-2-Leadership.pdf (Accessed April 17, 2017), 27.

[3] HQ USAF/A2DF, "AFSC 14NX Intelligence Officer Career Field Education and Training Plan," http://static.e-publishing.af.mil/production/1/af_a2/publication/cfetp14nx/cfetp14nx.pdf (accessed October 23, 2015), 9.

[4] SIGINT = signals intelligence. This is the intelligence form derived from various electronic signatures.

[5] A Distributed Ground Station, or DGS, is one the Air Force's several sites that receives raw intelligence collected from its intelligence aircraft, such as the U-2. A 14N at a DGS will typically bear flight commander responsibilities, overseeing dozens, if not 100 or more Airmen. Additionally, 14Ns will serve as mission coordinators between the intelligence consumer (Army or Marines) and the pilot.

they perform the exact same duties as their junior airmen and noncommissioned officers. 14Ns at these jobs typically lead only a handful of Airmen, if any. Each of these different jobs only lasts about three years, during which specific duties may change two to three times. Then, after their three years' time ends, they pack up and move on to an entirely different assignment. The former DGS flight commander of 100 Airmen may move on to supervise 200 Airmen, or may receive orders to switch places with the 14N that was providing flying unit support while supervising only five. It is for this reason that 14N training by its very nature entails a broad scope of skills and disciplines. However, for the purposes of this study I have elected to study three main leadership skills that apply to all 14Ns: learning, strategic thinking, and executing.

The high likelihood that each Air Force intelligence (intel) officer will serve in wildly different areas of intelligence with each successive assignment highlights one thing: that upon arrival to a new duty assignment, 14Ns must be able to quickly master the baseline knowledge, skills and abilities of whichever Air Force intelligence professionals they are assigned to lead. *Learning,* therefore, is of vital importance to 14Ns, and one of the three leadership skills I chose to study.

The second two traits come from Tom Rath's *Strengths-Based Leadership*, neither of which are unique skillsets to 14Ns: thinking strategically and executing. There are more detailed skillsets in each of these broad categories but for my purposes I chose to study them in their general definitions. *Strategic thinking* is any kind of thinking about "what could be. [Strategic thinking is] constantly absorbing and analyzing information and helping the team to make better decisions. [Strategic thinking] continually [stretches] our thinking for the

future."[6] 14Ns must provide a vision for their troops, determining what the goal is and where they need to go in the future. So strategic thinking is a skill worth investing in. Second is *executing*, which is the skill of leading people in the completion of tasks, whether large or small. It is "the ability to 'catch' an idea and make it a reality."[7] As a leadership skill, it is one that any leader (let alone any good employee) needs to know how to do well.

To sum up the problem – there are a variety of leadership skills the Air Force expects its intelligence officers to have, and it asks for more and more of them earlier in their careers. Three of them are *strategic thinking, executing* and *learning*, This is not to stay that these three skills are the most important ones a 14N needs to learn; they are merely the ones I chose to study (details on why found in chapter 2). Therefore, if the Air Force expects its 14Ns to *think strategically, execute* and *learn* better and faster in order to lead Airmen in the defense of the nation, it needs to know how. *How* can it teach them these leadership skills, especially in the face of limited resources and time? Is there something it can focus on more than others that would yield better and quicker results?

I hypothesize that there is.

The Pareto Principle might have an answer. Also known as the 80/20 rule, it states that 80% of the consequences stem from 20% of the causes.[8] According to this rule, for example, managers will spend 80% of their time dealing with issues pertaining to 20% of their

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[6] Tom Rath & Barry Conchie, *Strengths Based Leadership: Great Leaders, Team, and Why People Follow* (New York: Gallup Press, 2008), 26.

[7] Rath, 24.

[8] Nick Bunkley, "Joseph Juran, 103, Pioneer in Quality Control, Dies," The New York Times, http://www.nytimes.com/2008/03/03/business/03juran.html?_r=0 (accessed October 23, 2015).

assigned personnel. (Most managers will agree with this statement.) Applied to the leadership preparation of 14Ns, if the Air Forces spends 80% of its time on 20% of the most important "things" to train its intelligence officers how to think strategically, execute and learn, it could more efficiently prepare them for the heavy responsibilities ahead. What are these things?

I hypothesize that the answer is "structured analysis techniques," (also called SATs). To be clear, my question is "Does improving an Air Force intelligence officer's skills with SATs improve their leadership skills (specifically their execution, strategic thinking and learning skills)?" And my null hypothesis is "SATs make no difference in terms of the perception of whether or not 14N officers have "improved" leadership skills."

In the next chapter I conduct my literature review, where I review 14N issues, SATs, and other intelligence-related issues.

CHAPTER II

LITERATURE REVIEW

A study by the RAND Corporation is the impetus for my thesis. In 2009 they published a study called "Improving Development and Utilization of U.S. Air Force Intelligence Officers"[9]. The writers studied the qualifications needed for 14N leadership positions and how many 14Ns met those requirements. After presenting their analysis the authors then focus on how to better manage the 14N career field at the field grade officer (FGO)[10] level. It did not focus on any particular skill; the purpose was merely to identify the ones most needed for 14N FGOs and what skills they possessed. It was a quantitative study based on stated job requirements and personnel records. The authors conducted no interviews and RAND focused only on FGOs. But that is what makes their findings even more interesting.

First of all, RAND notes that 14Ns need to be better than they were at the time of the study. "In recent years, the U.S. Air Force has faced a shortage of general officers *with the necessary experience* to fill senior leadership positions in Air Force, joint, and interagency intelligence organizations and functions."[11] There are not enough 14Ns with the required experience, they say, to lead effectively where the Air Force needs them. So, RAND

[9] Marygail K. Brauner, Hugh G. Massey, S. Craig Moore, Darren D. Medlin; "Improving Development and Utilization of U.S. Air Force Intelligence Officers," RAND | PROJECT AIR FORCE, http://www.rand.org/content/dam/rand/pubs/technical_reports/2009/RAND_TR628.pdf (accessed December 16, 2016).

[10] FGO = the ranks between major, lieutenant colonel, and colonel

[11] RAND, iii (emphasis added).

researched what experience *is* required to fill those senior leadership positions; they conducted a supply and demand analysis. Appendix B details their results. The main takeaways? They note that "analysis experience was most frequently a critical requirement for jobs at each of the grade levels."[12] In other words, out of all the skills needed for intelligence officers to lead at *all* FGO levels, analysis was needed most frequently in all the jobs.

Reading this finding pushed me to study what priority analysis skills have in the 14N community. I found one influential document that highlights its importance. As the recently established 14N career bedrock, it explains the importance of analysis to intel officers.

The 14N Career Field Education and Training Plan (CFETP) is not a research document; it is policy outlining the Air Force's requirements and guidance for the 14N career field. It is important to cover in a literature review because of the emphasis it places on analysis.

The CFETP names analysis as one of the four core competencies – the four types of jobs a 14N could be assigned throughout his or her career. And although intelligence officers may or may not be assigned to an analysis-heavy job, the document emphasizes that "all AF intelligence officers must maintain and exercise analytical capabilities and critical thinking skills *wherever* they are assigned."[13] Additionally, five of the eight intelligence professional tradecraft activities cited in the CFETP involve large amounts of analysis.[14] Finally, the CFETP outlines analysis

[12] RAND, 9.

[13] CFETP, 10.

[14] CFETP, 13-15.

education and training as important prerequisites for each of the 14N skill level requirements (14N1, 14N2, 14N3, and 14N4).[15]

All three of these ideas certainly support the notion that analysis skills are not just important for intelligence leaders to possess, but disproportionately so to the other competencies of collection, integration and targeting (though it is possible that the authors writing this guidance were also heavily influenced by RAND's study).

It is interesting to note that targeting and integration also contain elements of analysis. Targeting, according to Air Force doctrine, is the "process of selecting and prioritizing targets and matching the appropriate response to them."[16] Later, the document elaborates by stating that targeting requires "*analyzing* adversaries and enemies to determine critical vulnerabilities against which national capabilities can be applied to create specific desired effects that achieve objectives, taking into account operational requirements and capabilities."[17] Integration, similarly, is "the application of *all-source intelligence* information to sustain plan, conduct and assess combat operations. It *contextualizes* intelligence for the mission at hand, and *synthesizes* it with the planning, training, and execution of tactical missions for achieving kinetic and non-kinetic effects."[18] Integration is a relatively new term, coined in this sense first by the CFETP itself. Another term used in Air Force doctrine for integration is

[15] 14N1, 14N2, 14N3 and 14N4 correspond to an intelligencer officer's skill and experience levels. For example, a lieutenant who recently graduated from the intelligence officer course is a 14N1.

[16] U.S. Department of the Air Force, *Targeting*, Air Force Doctrine Annex 3-60, (Maxwell Air Force Base, AL: Department of the Air Force) 14 Feb 2017, https://doctrine.af.mil/download.jsp?filename=3-60-Annex-TARGETING.pdf (accessed March 16, 2017), 3.

[17] Air Force Doctrine Annex 3-60, 2.

[18] CFETP, 11, emphasis added.

Wing, Group, or Squadron intelligence support. Among the various functions outlined doctrinally are "mission planning and joint intelligence preparation of the operational environment (JIPOE) support," and "defensive threat capabilities and penetration analysis."[19] JIPOE is an inherently analytical activity. That defensive threat analysis likewise requires analysis skills goes without saying. So three out of the four 14N core competencies are analysis-centric or analysis-related. No other competency works this way.

Not long after studying the CFETP for my own career guidance, I began a military assignment rewriting a course of instruction for 14N FGOs. It introduced me to another paper that discusses the importance of analysis in Air Force intelligence.

The Intelligence Directorate at Headquarters Air Force published a white paper in 2013 about the need for and plan to "revolutionize" its members' intelligence analysis skills, and how analysis is key to the future of Air Force intelligence. [20] The Air Force's plan on how to change analysis processes is not my focus; I care most about two statements made that outline some important issues. The first one states: "[Recently], the importance of *analysis* to

[19] U.S. Department of the Air Force, *Global Integrated Intelligence, Surveillance & Reconnaissance Operations*, Air Force Doctrine Annex 2-0, (Maxwell Air Force Base, AL: Department of the Air Force) 29 Jan 2015, https://doctrine.af.mil/download.jsp?filename=2-0-Annex-GLOBAL-INTEGRATED-ISR.pdf (accessed March 16, 2017) 26.

[20] HQ USAF/A2, "White Paper: Revolutionizing AF Intelligence Analysis," Department of the Air Force, http://www.defenseinnovationmarketplace.mil/resources/20140211_IntelligenceAnalysisWhitePaper_PA.pdf (accessed March 16, 2017) 8.

the future of AF ISR[21] has gained considerable traction."[22] And second: "As of 2013, the AF continues to lag behind the progress of the greater [Intelligence Community (IC)] in implementing [Director of National Intelligence] guidance in [the areas of analysis]."[23] What is interesting about this is that this document, the CFETP, and RAND's research were all published within four years of each other. Even if it were the case that the CFETP and white paper authors were influenced by RAND's study, it does not diminish the significance of the fact that so many analysis-focused papers were published so close together. Instead, it highlights the importance of improved Air Force intelligence analysis. It also supports what RAND's study says about 14Ns needing analysis skills: the Air Force had fallen behind other IC members in terms of analytic capacity (though the writers do not specify how), and its intelligence leaders (14Ns) are no exception.

Learning about these three analysis issues—the CFETP's guidance and emphasis on analysis skills; RAND's findings on the high demand for analysis skills; as well as the fact that the Air Force had fallen behind the rest of the IC—was enlightening.

Continuing with the literature review, there are two more important documents that discuss the big picture importance of analysis skills, and they both predate the previous Air Force-oriented documents. They stem from the 9/11 terrorist attacks and the controversial Iraq Weapons of Mass Destruction (WMD) intelligence estimate of 2003.

[21] ISR=intelligence, surveillance, and reconnaissance; it is another term for the Air Force intelligence community

[22] HQ USAF/A2, 1.

[23] Ibid.

The first document, the *9/11 Commission Report*, highlights the IC's lack of intelligence leadership and analysis capabilities. Chapter 11, "Foresight and Hindsight," discusses a pervasive lack of analytic imagination throughout all government agencies, including the IC. Imagination is an important part of analysis; it is critical during at least three phases: the brainstorming process, when considering future scenarios and indicators, and during decision support[24]. A lack of imagination throughout the IC during the time of the attacks could be indicative of the degraded state of analysis skills overall, as well as the poor leadership skills throughout the ranks.

It is probable that poor leadership had everything to do with this lack of imagination. In the same section on imagination, the authors note that the "methods for detecting and warning of surprise attack that the U.S. government had so painstakingly developed in the decades after Pearl Harbor did not fail; instead, *they were not really tried*."[25] The authors seem to be arguing that the methods (structured analysis techniques being one of them) were not even used to detect an attack. Why not? They don't attempt to answer that question in the report, but I blame it on leadership, or the lack thereof. As one author puts it, "Any study of intelligence successes will show that fundamental principles have been honored; conversely,

[24] Richards J. Heuer Jr. and Randolph H. Pherson, *Structured Analytic Techniques for Intelligence Analysis*, 1st Edition (Washington, D.C.: CQ Press, 2011), back cover.

[25] *The National Commission on Terrorist Attacks, The 9/11 Commission Report* (New York: W.W. Norton & Company, 2004), 347-348, emphasis added.

studies of intelligence failures reveal the lack of principle-based management and leadership."[26]

But why, specifically, did leadership in the IC choose to not use the methods that decades of research and work had developed? Was it because of a lack of capability, because no one knew how to use them? Or was it more due to a lack of intent to use these tools, because they believed these tools were unnecessary? The answer is probably both. Most likely, the leaders involved did not see the benefit these tools could have afforded them and hence never learned how to use them. Consequently, they never developed the skills that could have prevented 9/11, and just as importantly, they never led the IC through the disclosure of their potential findings to the Secretary of Defense or the President.

Obviously there were other factors that kept us from preventing 9/11, such as bureaucratic red tape and "stovepiping"[27] between agencies. Those issues, however, are beyond the scope of this study. But if, early on, leadership within the IC had insisted on using the methods that had been developed, perhaps this one barrier to the prevention or mitigation of 9/11 might have been removed. We will never know. But pondering these remarks and

[26] James E. Lightfoot et al., "Learning with Professionals: Selected Works from the Joint Military Intelligence College," (Washington, D.C.: Joint Military Intelligence College (U.S.), Center for Strategic Intelligence Research, 2005) 48.

[27] Stovepiping is referred to as different collection agencies competing with each other to collect without regards to which method is best. Then they don't share the information with each other. Furthermore, when analysis begins, analysis agencies begin competing all over again and forget or refuse to share their analysis with each other. See Mark Lowenthal, *Intelligence: From Secrets to Policy*, Fifth Edition, (Washington, D.C.: CQ Press, 2012), 80-81, 135.

possibilities led me to wonder about a possible connection between learning (and using) structured analysis skills and improved leadership skills.

Next in the literature review is the Intelligence Reform and Terrorism Prevention Act of 2004, or "IRTPA". Enacted primarily as a result of the failure to stop the 9/11 attacks and the IC's controversial 2003 Iraq WMD estimate, the IRTPA's first priority was to attempt to fix the IC. It is telling that the first reform it made was the national intelligence leadership. Clearly that points to what lawmakers thought about the importance of leadership's role in the controversy.

Further study of the IRTPA shows specific emphasis on the tradecraft skill of alternative analysis, also known as "red teaming." Intelligence Community Directive 203 defines red teaming as "the systematic evaluation of differing hypotheses to explain events of phenomena, explore near-term outcomes, and imagine possible futures to mitigate surprise and risk."[28] This tradecraft standard flexes the critical thinking muscles by formalizing a breakaway from conventional thinking. It forces analysts to consider "differing hypotheses," which aids their understanding of how the enemy thinks. This would help us predict what they might do, thus possibly preventing surprise attacks.

Red teaming is an intelligence-specific technique, but can learning techniques such as this have carryover value for new intelligence officers regardless of their duty positions? For example, a 14N flight commander at a DGS may never need to conduct red team analysis (or any traditional intelligence analysis at all, for that matter). But red teaming is a way to

[28] Office of Director of National Intelligence, "Intelligence Community Directive 203: Analytic Standards," https://www.dni.gov/files/documents/ICD/ICD%20203%20Analytic%20Standards.pdf (Accessed April 17, 2017), 4.

consider all the options available, to be more thorough. Can the level of detail and thoroughness red teaming teaches carry over to leadership responsibilities that this DGS flight commander will have, such as strategic thinking and executing? If analysis such as red teaming is so important, could this be one way to improve our 14Ns' leadership skills? If a 14N is fulfilling a staff job, with no intelligence analysis required; or a collection management job; or a Flight commander job in a unit unrelated to intelligence—is it possible that analysis skills improve the level at which 14Ns can lead? Studying the IRTPA and 9/11 Commission Report for my other intelligence graduate work was another experience that sparked my interest in this and similar questions, which is why I determined to find out.

Before moving on to the rest of the literature, it is helpful to review the problem that I discovered after reviewing the previous sources. It seems that the problem, outlined by these five sources is:

- There were not enough 14Ns with the necessary experience to fill senior-level responsibilities (RAND)
- One of the necessary qualifications that 14Ns needed more of is analysis skills (RAND)
- 14Ns should always maintain analysis skills (CFETP)
- 14Ns, along with the rest of Air Force intelligence, have been slow to improve their analysis skills (HQ Air Force)
- Two of the factors leading up to failed intelligence on 9/11 was 1) a failure to use analysis methods, and 2) unacceptable levels of certain analysis skills (9/11 Commission Report)

- The IRTPA attempted to fix two things: a broken IC leadership, and little to no formalized use of Red Teaming (IRTPA)

The high frequency of pairing leadership and structured analysis skills as problem children among 14Ns is striking. Was there a connection between them? Could improving one improve the other? The best sources I knew of were literature on intelligence analysis and intelligence management, since generic leadership literature doesn't approach intelligence analysis. Next, I provide a brief overview of the most significant writings that I found.

The first is a book written by Richards J. Heuer Jr. and Randolph H. Pherson called *Structured Analytic Techniques for Intelligence Analysis*, which is more or less the largest reference available for SATs. It contains dozens of SATs that are appropriate for many different analysis situations.

However, there are some interesting comments that the authors make about the implications of SATs. First, where these SATs come from reveals an interesting clue about their relationship with leadership. They explain: "To select the most appropriate additional techniques for inclusion in this book, Heuer reviewed a large number of books and Web sites dealing with intelligence analysis methodology, qualitative methods in general, *decision making*, *problem solving*, competitive intelligence, law enforcement intelligence, forecasting or futures research, and social science research in general."[29] The authors reviewed sources on decision making and problem solving in order to know what to include in their book. This is significant because two of the three 14N leadership attributes that I chose to study deeper—executing and strategic thinking—are connected in some way to those two skills. To execute tasks and think strategically is to make decisions and solve problems.

[29] Heuer & Pherson, 30, emphasis added.

Another statement they make is that "although the focus is on techniques for all-source political and strategic intelligence analysis, *many of the techniques described in this book have wide applicability* to tactical military analysis, law enforcement intelligence analysis, homeland security, business consulting, financial planning, *and complex decision making in any field*."[30] Again, one aspect of leadership is decision making. And as the authors claim that many of the SATs they present in their book have "wide applicability… in any field", it follows logically that they can help a leader to improve his or her leadership skills.

One final quote from Heuer and Pherson is: "There are… a small number of core techniques that beginning analysts should be trained to use, because they are needed so frequently and are widely applicable across the various types of intelligence analysis… . These core techniques are [Structured Brainstorming, Cross-Impact Matrix, Key Assumptions Check, Indicators, Analysis of Competing Hypotheses, Premortem Analysis, and Structured Self-Critique]."[31] Interestingly, each one of those SATs has aspects to it that might improve one's leadership abilities. For example:

- Structured brainstorming is a way to come up with ideas better than calling them out and rejecting them in a free-for-all fashion. Although most people learned about this "simple" technique in junior high school, most don't practice it correctly. Doing it right ensures that everyone's ideas are included and rejects nothing until *after* the brainstorming session is over and all have had their say. It encourages sharing from the hesitant because of "far-fetched" idea that just might be the answer, or from others simply because they are shy. What a great practice

[30] Ibid, 29, emphasis added.

[31] Ibid, 31-32.

for a leader to develop when it comes to strategic thinking, to ensure that the ideas of all are included.

- The Cross-Impact Matrix is a table that predicts how a number of variables might impact an event in the future. This has an obvious intelligence flavor to it, but it also implies strategic thinking. Discussing and thinking about how one thing might affect another in the future is right down strategic thinking's alley. Knowing this might improve a leader's ability to think about "what could be."[32]
- Next, the Key Assumptions Check is a way to, before a project begins, explicitly state the often unstated stories analysts tell themselves. Some of the benefits, according to a 2009 US government-developed primer, are to "explain the logic of the analytic argument and expose faulty logic," "understand the key factors that shape an issue," "uncover hidden relationships and links between key factors," and "prepare analysts for changed circumstances that could surprise them."[33] These are all benefits that could easily cross over to the leadership strengths of influencing and relationship building, which are other leadership traits that Tim Rath covers in his book. Influencing is the type of skill a leader uses to get people to do what they need them to do and relationship building is increasing, through one means or another, one's rapport with people. Though the Key Assumptions Check is also an intelligence technique, the fact is that it gets a person in the habit

[32] Rath & Conchie, 26.

[33] U.S. Government, *A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis*, March 2009, http://www.analysis.org/structured-analytic-techniques.pdf (Accessed January 4, 2017), 7.

of explicitly stating something that often goes unsaid. Put in non-intelligence scenarios, this could mean holding difficult conversations and identifying the elephant in the room with a co-worker, subordinate or boss. Done right, would this skill not increase one's ability to influence or build relationships?

- Analysis of Competing Hypotheses, or ACH, is yet another SAT that could improve one's strategic thinking abilities. It is a way to think critically about our own claims. An analyst does this by generating multiple explanations for an event and then subsequently eliminating them based on the light of each piece of evidence. The hypothesis with the *least* amount of disproving evidence is the one the analyst goes with. Strategic thinking is the ability to think about what *could be*, and ACH is another way to do that.
- The next technique is Premortem Analysis, which is a way for analysts to quickly support or disprove their hypothesis. The analyst chooses their hypothesis and assumes that, down the road, it was wrong. He then brainstorms reasons, based on real evidence, why this hypothesis might have been wrong. This SAT is a way to call analysts' attention to factors or pieces of evidence they might not have considered. This follows the same trend of strategic thinking, which is helping a leader and his team to think better about the future. Premortem Analysis is another SAT that might get a leader into this sort of habit.
- Finally, the authors suggest using Structured Self-Critique. This is, in essence, a lengthy checklist that analysts go through to ensure that they have used unbiased, thorough, and evidence-based work. They seek to find problems in the analysis rather than defend it. This SAT is related to executing and influencing from

> Rath's model. With "thorough" being the key word, this SAT teaches an analyst to make sure all his I's are dotted and T's are crossed. Armed with such knowledge, it substantially increases the likelihood of a leader's ability to get something done (execute) and convince others of their judgment (influencing).

With all the valuable information that Heuer and Pherson's book contains, however, I will introduce a common trend that this book, as well as other intelligence analysis books follow that limits this literature review: they do not contain quantitative, raw data that supports any sort of claim about the relationship between leadership and analysis skills. They present how to improve analysis skills for that end only.

The next intelligence analysis literature to review is one by Randolph Pherson again, and Sarah Miller Beebe called *Cases in Intelligence Analysis: Structured Analytic Techniques in Action.* This is a book that, rather than discuss intelligence leadership, provides case studies for the reader to practice different SATs, thus improving their analysis skills. However, the authors do comment about what SATs can do to the person using them. "The techniques themselves are not that complicated," they explain. "But they can push us out of our intuitive and comfortable—but not always reliable—thought processes. *They make us think differently in order to generate new ideas, consider alternative outcomes, troubleshoot our own work, and collaborate more effectively.*"[34] These are exactly what leaders need to do. Any 14N would need to be able to generate new ideas, consider possible consequences, troubleshoot their own work, or collaborate more effectively.

[34] Sarah Miller Beebe and Randolph H. Pherson, *Cases in Intelligence Analysis: Structured Analytic Techniques in Action* (Los Angeles: CQ Press, 2012), xxix, emphasis added.

The next is a book by Don McDowell entitled *Strategic Intelligence: A Handbook for Practitioners, Managers, and Users*. There are many generic intelligence books available, but this one's subtitle also addresses managers. How, it McDowell does not discuss anything related to intelligence practices that would improve and intelligence manager's leadership skills. In fact, he specifically states that "there are really no particular, special, or unique requirements for strategic intelligence management that set it apart from other management applications. What is needed, above all else, is good, supporting, applications of established, sound management principles."[35]

He details further that an intelligence leader "sets [a] supportive environment to facilitate [intel] functioning…, establishes targets and monitors progress…, identifies (with client) performance expectations and monitors progress…, mentors the working of the analysts…," and "oversees workloads and allocates/rejects tasks".[36] Later, McDowell adds that "the application of good management practice is essential to bring out the full potential and best qualities of an analyst."[37] This job description certainly sounds like those of many other management job functions. If there is nothing inherently special about intelligence leadership, then perhaps SATs can be applied more broadly to help improve anyone's skills. I discuss the possibilities for this at the end of my findings. The final piece of literature to discuss is the primary source from which I took my leadership function descriptions.

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[35] Don McDowell, *Strategic Intelligence: A Handbook for Practitioners, Managers, and Users* (Lanham, Maryland: The Scarecrow Press, Inc., 2009), 96.

[36] Ibid, 90.

[37] Ibid, 100.

Tim Rath and Barry Conchie, in their book *Strengths-Based Leadership*, highlight the importance of focusing on one's strengths as a leader instead of trying to improve weaknesses. In their research, they explain that "four distinct domains of leadership strength emerged: Executing, Influencing, Relationship Building, and Strategic Thinking. While these categories appear to be general, especially when compared to the specific themes [from our other work], it struck us that these broader categories of strengths could be useful for thinking about how leaders can contribute to a team. A more detailed language may work best for individual development, but these broad domains offer a more practical lens for looking at the composition of a team.[38]

Similar to what McDowell claims about intel leadership, there seems to be very little that is unique to 14N leadership job descriptions. And like Rath and Conchie outline, I have noticed that all 14Ns need to do a little each of executing, influencing, relationship building, and strategic thinking. The two that seemed the most relevant, however, were executing and strategic thinking. According to their definitions, "leaders with dominant strength in the Executing domain know how to make things happen. When you need someone to implement a solution, these are the people who will work tirelessly to get it done. And "leaders with great Strategic Thinking strengths are the ones who keep us all focused on what *could be.* They are constantly absorbing and analyzing information and helping the team make better decisions. These two both lend themselves to less people-oriented and more task-oriented leading, which is more compatible with SATs in general.

[38] Rath & Conchie, 22-23.

Finally, Learning is a skill I was first introduced to from author Tim Ferriss. His blog discusses accelerated learning several times[39] and he interviews some of the greatest teachers in nearly every professional genre[40]. But the first time he published Learning in a book was in *The 4-Hour Chef.* This is where I first got the notion that we can learn better and more efficiently. This SAT, based on my personal experience, is integral to life as an intel officer. As mentioned previously, 14N career responsibilities change frequently. Just ask any 14N what his job description is within a year to 18 month time window and his answer will likely change. And that is just at the same duty location. Add to that the high move tempo of every 24-48 months and those job responsibilities change even more. Due to likely increased manning requirements in the future (Air Force officer accessions are already abnormally high), it is unrealistic to simply raise the required IQ level for 14N selection. What the Air Force needs is to improve its 14N's learning as a skill. Every 14N would be more effective if they knew exactly how to quickly master the new rules, procedures, facts, sources, etc. of each new job they undertake. It would lend to more credibility and less stress for them as the new boss. Fewer airmen would need to worry about picking up on the "new guy's" slack. The whole team could accomplish their mission more completely and in less time.

[39] For example, see Tim Ferriss, "A How-To Guide: Accelerated Learning for Accelerated Times," The Tim Ferriss Blog, http://tim.blog/2013/05/20/accelerated-learning-techniques/ (Accessed March 20, 2017); also see Tim Ferriss, The Art and Science of Learning Anything Faster, The Tim Ferriss Blog, http://tim.blog/2016/10/06/the-art-and-science-of-learning-anything-faster/ (Accessed March 20, 2017).

[40] To include sports. See Timothy Ferriss, *The 4-Hour Body: An Uncommon Guide to Rapid Fat-Loss, Incredible Sex, and Becoming Superhuman* (New York: Harmony Books, 2010).

In summary, no publication that I have found details any data or proposal to research the possible linkages between SAT and leadership skills. There is plenty of work on SATs and analysis, plenty on intelligence in general, and plenty on leadership; none combines the three topics into one study. I also conducted an exhaustive research of student papers from the Air Force's Air Command and Staff College and Air War College. There are plenty of papers about leadership, but no there is no research tying it to SATs.

So is there anything to this idea? *My hypothesis was yes*. Specifically, I expected to see improved abilities in all three areas. Next, I explain how I chose to find out if this was the case.

CHAPTER III

METHODOLOGY

To begin my study, I decided to conduct a survey of my research subjects in order to discover whether or not there was any relationship or correlation between the independent variable (the learning of SATs) and the dependent variable (14N leadership skills). I conducted a longitudinal survey so I could get a solid before-and-after picture of my subjects. The study period lasted for about three months, from the date of the pre-survey to the date of the post-survey. My subject population were all individuals who underwent Air Force intelligence officer training in either 2009 or 2010[41]. I chose these year groups because 2010 is the year I received my training and am most familiar with the content of the training administered.

I studied a total of eight 14Ns. After obtaining written permission from Goodfellow Air Force Base's 315th Training Squadron Commander to do so, I compiled and randomized a database of all the names of the 14Ns that graduated in 2009 and 2010 and began contacting them individually, soliciting the participation of anyone interested in being a subject in my study. I emailed about 50 14Ns; nine responded. I deliberately chose to randomize the population of my study because it was the most cost effective method available to me at the time, rather than stratifying my subjects.

[41] Not all the subjects were true intelligence officers because one of the subjects was a civilian. However, the study is still valid because this individual received the same training as all the active duty 14Ns and, at the time of the study, was fulfilling the same roles and responsibilities that a "normal" 14N would.

Once in contact with my subjects I administered a pre-survey to them, which is a Google document that I developed with guidance on the survey questions from my then-thesis committee chair, Dr. Robert Ehlers.[42] Questions on the survey ask about different types of leadership and SAT experience as they pertain to the three chosen leadership skills of learning, strategic thinking and executing. After the subjects took the pre-survey I emailed them a short lesson teaching one SAT related to the specific leadership skill. They were to take one week to study this SAT and put it into practice as much as possible. The second week I would send them the next SAT, and so on for the third week. After about six weeks from the time that I emailed them the first SAT lesson I gave them access to the post-survey to observe any changes in their responses to the survey questions. The post-survey posed identical questions to the pre-survey.[43] More than anything, I was searching for the subjects' self-assessments of their leadership abilities before and after they learned the SATs. Did their perceived abilities to think strategically, execute and learn improve? Originally, part of my study included administering the same surveys to each of the subjects' bosses. I wanted to do this in order to get more objective views on my subject's leadership skills. However, due to the small pool of volunteer subjects, I removed this requirement for my subjects in order to participate.

I presented the SATs in standardized lesson formats. The lessons each included an introduction to the SAT, a minimum target homework, suggested additional exercises and supplementary resources. I used the format that I had experienced recently as a student in an

[42] Reader may view the pre-survey at https://goo.gl/forms/yQ0bXklUa9dTb3as1.

[43] Reader may view the post-survey at https://goo.gl/forms/csOcQnBt1TkzUmMy2.

online course that I had taken.[44] The following paragraphs outline briefly what each of my lessons contained. See Appendix B for the full content of the lessons.

The first lesson covers the 14N skill of learning. As I have already mentioned, learning is important for 14Ns because they switch duty locations and responsibilities so often, many of them differing greatly from previous ones. The faster and better a 14N can learn their duties, the quicker they can lead their teams effectively. I credit author and experimenter Tim Ferriss for the concepts that led to the development of the learning SAT lesson that I delivered to my subjects. It consists of two acronyms – DiSSS and CaFE. They each contain steps a 14N should take as she learns a new skill. Though both are beneficial, DiSSS is the more important of the two. It stands for Deconstruction, Selection, Sequencing, and Stakes. Here is how Ferriss explains them: "Deconstruction: What are the minimal learnable units, the LEGO blocks, I should be starting with? Selection: Which 20% of the blocks should I focus on for 80% or more of the outcome I want? [This is another source that helped me develop the idea that SATs might have disproportionate benefits to improving leadership skills for 14Ns.] Sequencing: In what order should I learn the blocks? Stakes: How do I set up stakes to create real consequences and guarantee I follow the program?"[45] CaFE stands for Compression, Frequency, and Encoding. Again, Ferriss expounds: "Compression: Can I encapsulate the most important 20% into an easily graspable one-pager? Frequency: How frequently should I practice? Can I cram, and what should my schedule look like? What growing pains can I predict? What is the minimum effective dose (MED) for volume? [MED,

[44] Cal Newport and Scott Young, Top Performer, http://top-performer-course.com (accessed March 16, 2017).

[45] Timothy Ferriss, *The 4-Hour Chef: The Simple Path to Cooking Like a Pro, Learning Anything, and Living the Good Life* (Boston: New Harvest, 2012), 38.

as Ferriss explains in another book, is the minimum amount of time, energy, etc., required to achieve your exact goals.[46] It does not entail slacking off or cutting corners; it simply means not doing excess or unnecessary work.] Encoding: How do I anchor the new material to what I already know for rapid recall? Acronyms like DiSSS and CaFE are examples of encoding."[47]

I had used Ferriss's model a few times for my own professional goals. I believed they had helped me, but I knew that I had no real data to support my beliefs. This was the perfect opportunity to test them on someone else who shared backgrounds with me.

The next leadership skill was Execution. The SAT I chose to share is called "Swim Lanes". I first learned about Swim Lanes from the books by Dan Roam, *The Back of the Napkin* and *Unfolding the Napkin*. Roam's expertise lies in drawing simple pictures to explain, understand, and improve problem solving. "What if," Roam posits, "there was a way to more quickly look at problems, more intuitively understand them, more confidently address them, and more rapidly convey to others what we've discovered? What if there was a way to make business [or any] problem solving more efficient, more effective, and – as much as I hate to say it – perhaps even a bit more *fun?* There is. It's called visual thinking, and it's what this book is all about: solving problems with pictures."[48]

Roam offers six problems that drawing pictures can help solve: "1. *Who* and *what* problems – Challenges that relate to things, people, and roles… 2. *How much* problems –

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[46] Ferriss, *The 4-Hour Body*, 38.

[47] Ferriss, *The 4-Hour Chef*, 39.

[48] Dan Roam, *The Back of the Napkin: Solving Problems and Selling Ideas with Pictures - Expanded Edition* (New York: Penguin Group, 2009), 1.

Challenges that involve measuring and counting… 3. *When* problems – Challenges that relate to scheduling and timing… 4. *Where* problems – Challenges that relate to direction and how things fit together… 5. *How* problems – Challenges that relate to how things influence one another… 6. *Why* problems – Challenges that relate to seeing the big picture…"[49] These books teach how to draw pictures to solve all of those types of problems. Executing tasks and projects involves all of those aspects, but I felt that one of the more beneficial sections for me was the "when" problems he teaches the readers to solve. "In order to show [when] to somebody else, we use a timeline to represent the various states of our [task or project] at various times, or the relationship of those objects over time."[50]

This leads Roam to teach the reader about swim lanes, which is exactly what the reader might think about when picturing competitors at a swim meet: multiple people swimming in different lanes in a pool, all working to accomplish their goal of winning, yet finishing at different times. Swim Lanes as a SAT works the same way: different people or teams work in their respective duties (lanes), all fulfilling their roles at different times.

Finally, as I read one day about SWOT analysis I realized it fit the necessary criteria for strategic thinking analysis.[51] This SAT is a way to answer questions about your team or a project. What is good and what is bad about our team? What should we watch out for? What can we capitalize on? This matches perfectly with the strategic thinking skill of imagining "what could be," as Rath puts it.

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[49] Roam, 14.

[50] Roam, 191.

[51] James Manktelow, et. al., "SWOT Analysis: Discover New Opportunities, Mange and Eliminate Threats," Mind Tools, https://www.mindtools.com/pages/article/newTMC_05.htm (accessed March 16, 2017).

In summary, the semi-quantitative portion of my study involved a pre-survey, SAT acquisition, and then a post-survey to test my hypothesis.[52] The question I hoped to answer was "Does improving an Air Force intelligence officer's skills with structured analytic techniques improve their perceived leadership skills (specifically their execution, strategic thinking and learning skills)?"

I also reached out to three of my subjects to inquire about some in-depth interview questions, hoping to add a more qualitative portion to my methodology. They all responded and provided me some solid data. Hence, a discussion on qualitative methods is in order.

First, the purpose of qualitative research is to obtain more context-specific data than a quantitative method can provide. John Creswell, professor of educational psychology and researcher on research explains that qualitative researchers "tend to collect data in the field at the site where participants experience the issue or problem under study. They do not bring individuals into a lab (a contrived situation), nor do they typically send out instruments for individuals to complete."[53] This more natural setting brings an inherent strength to qualitative studies: validity. Creswell expounds: "Validity… is one of the strengths of qualitative research, and it is based on determining whether the findings are accurate from the standpoint of the researcher, the participant, or the readers of an account."[54] Qualitative studies add the

[52] I describe my surveys as "semi-quantitative" because although they are surveys measured numerically, they still only measure my subjects' *perceived* improvements.

[53] John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Third Edition (Los Angeles: Sage Publications, 2009), 175.

[54] Creswell, 191.

human element to support, or argue, the numbers. There are some pieces to the qualitative puzzle to remember, however.

Because of the dynamic situation of these real-world studies, researchers cannot always accurately predict the right or wrong questions to ask or details to study. He continues: "The research process for qualitative researchers is emergent. This means that the initial plan for research cannot be tightly prescribed, and all phases of the process may change or shift after the researcher enters the field and begins to collect data. For example, the questions may change, the forms of data collection may shift, and the individuals studied and the sites visited may be modified. The key idea behind qualitative research is to learn about the problem or issue from participants and to address the research to obtain that information."[55] I conducted interviews with three of my subjects, and for this same reason (keeping the focus on learning from the participants) I made a special effort to leave my interview questions as open-ended as possible, thus allowing my subjects maximum freedom to respond.

Additionally, in my thesis proposal I outlined a plan to conduct other qualitative interviews, with Air Force analysis instructors Master Sergeant (retired) Paul Harvey, Chief Master Sergeant (retired) David Crane, and Major General (retired) Glen Shaffer. Mr. Harvey and Mr. Crane taught analysis blocks at the 14N schoolhouse at Goodfellow Air Force Base for many years. Before his retirement, Major General Shaffer acted as the director of intelligence for the Joint Chiefs of Staff at the Pentagon. He currently serves as an advisor to the 25th Air Force commander (an Air Force intelligence command) and an adjunct professor (teaching SATs) at the University of Texas San Antonio. I wanted to get each of their perspectives on the possible connection between SAT and leadership skills. However, I

[55] Creswell, 175-176.

changed my mind about these interviews because I decided that it would be more valuable for me to interview my subjects themselves to see how they felt about their experiences learning the SATs.

But interviews are not perfect. Creswell lists what about interviews could give us bad data. He advises that an interview "provides indirect information filtered through the views of interviewees; provides information in a designated place rather than the natural field setting; researcher's presence may bias responses (I did not conduct the interviews in person, but the correspondence with me still presented some presence as a researcher); not all people are equally articulate and perceptive."[56] All of these are valid points to consider when deciding upon a research method. In my case, I simply reminded the subjects to be as honest and detailed as possible. This was the best I knew how to remind them of their potential biases and to be as articulate as possible.

Another deficiency in my interviews is the background of my subjects. "The idea behind qualitative research is to purposefully select participants… that will best help the researcher understand the problem and the research question," says Creswell. "This does not necessarily suggest random sampling or selection of a large number of participants and sites, as typically found in quantitative research."[57] Because of my small research subject pool I did not have the luxury of being able to choose which participants to study qualitatively. I merely emailed the three most responsive subjects and asked if they would be willing to answer some more questions.

[56] Creswell, 179.

[57] Creswell, 178.

Considering these potential downsides, why then, did I choose to interview my subjects? The biggest reason is because of distance. I live far away from all my subjects, and interviews were thus the only feasible option. Interviews are "useful when participants cannot be directly observed," explains Creswell.[58]

However, there is another benefit to interviews. With interviews, "participants can provide historical information,"[59] such as prior 14N base and duty assignments. This would allow me to further analyze each subject's background to spot any biases, expertise or experience that could provide context to their answers. This in turn would allow me to analyze and highlight any relevant connections between my independent and dependent variables.

Knowing all of this, I moved forward and did my best.

[58] Creswell, 179.

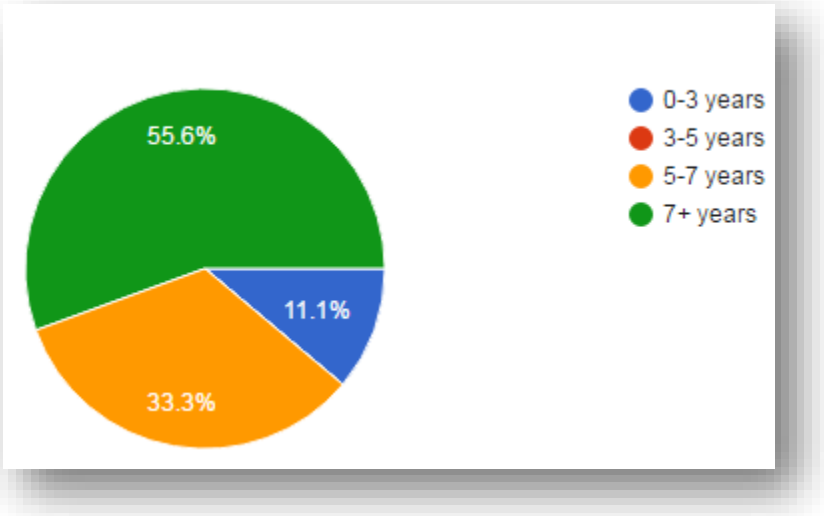
[59] Creswell, 179.

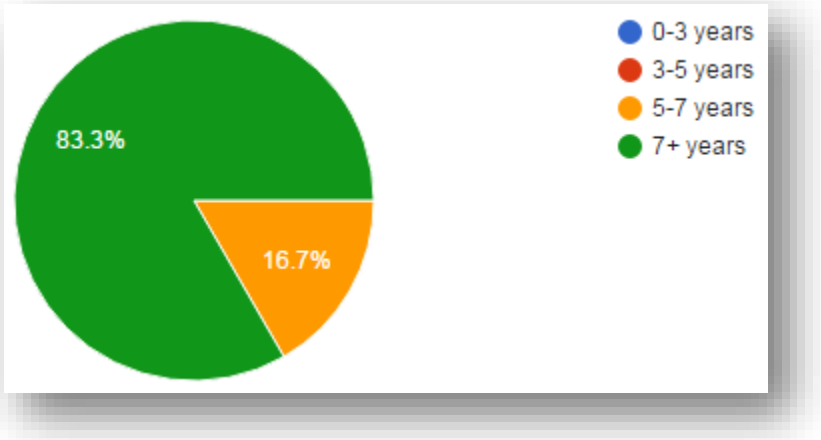
CHAPTER IV

ANALYSIS

The small number of participants automatically limited the potential for analysis. And second, one participant dropped out in between the two surveys due to work conditions. That made true comparative analysis very difficult. Nevertheless, there are still some useful data points in the results. Below are the survey questions with the pre- and post-survey answers, in that order. I also include any relevant analysis or comments.

1. What is your total experience with leadership (any level of leadership at any organizations)?[60]

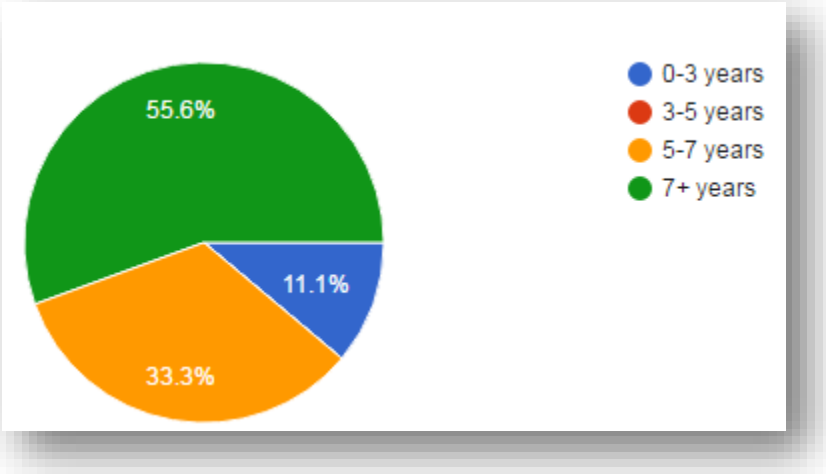


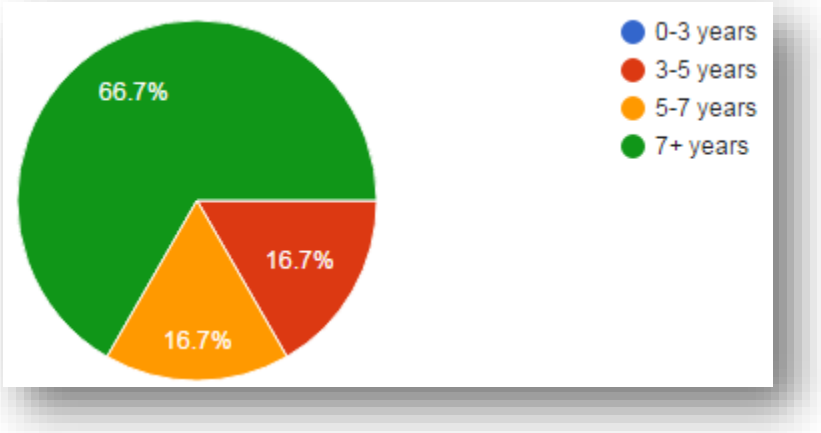


This question has the possibility of negating my hypothesis, and therefore, is valuable. If my subjects' overall leadership experience increased during the course of this short study, then it is possible that this leadership experience affected any possible growth in leadership skills rather than the SATs.

[60] This question is meant to ask the subjects' experience acting as leaders, not merely interacting with leaders.

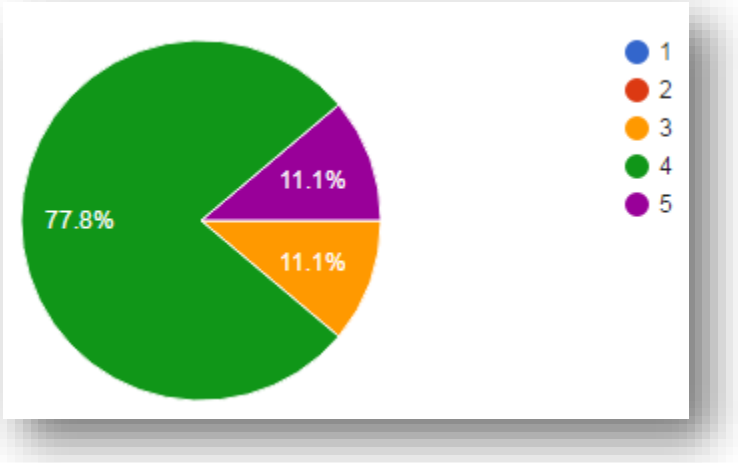
2. What is your experience with 14N leadership?

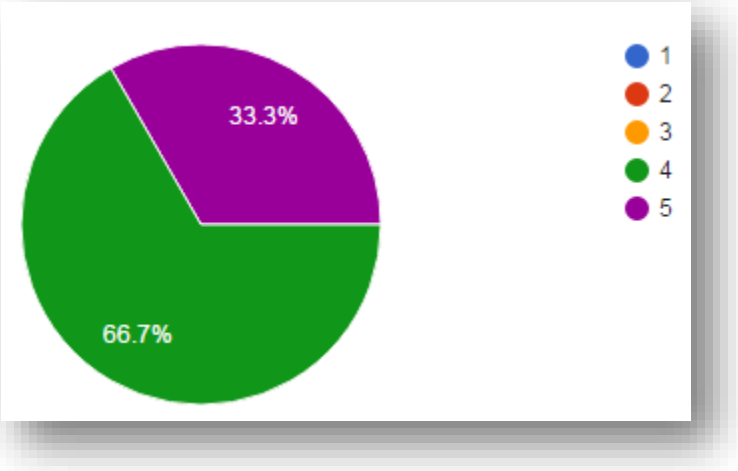




This question has similar significance to #1. However, the perceived number of 14N experience years actually *decreased*, which was unexpected. Either a portion of the subjects felt their initial answer was incorrect, or they miscalculated while taking the post-survey.

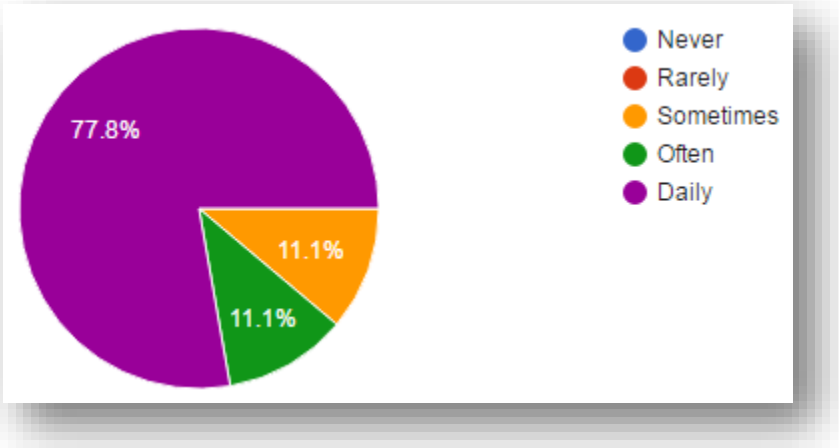
3. On a scale of 1-5 (1 being the weakest and 5 being the strongest), how would you rate your leadership skills?

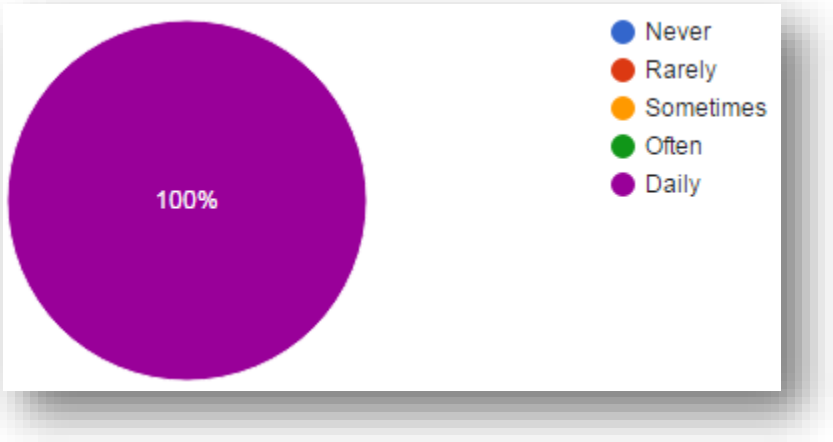




The obvious difference here in the responses is that the perceived *"5"* leadership skills increased by one. At least one person felt their leadership skills improved between surveys. I recognize that correlation does not equal causation, however. It could be because of the SATs, or could be for other reasons.

4. How often do you use leadership in your professional life?

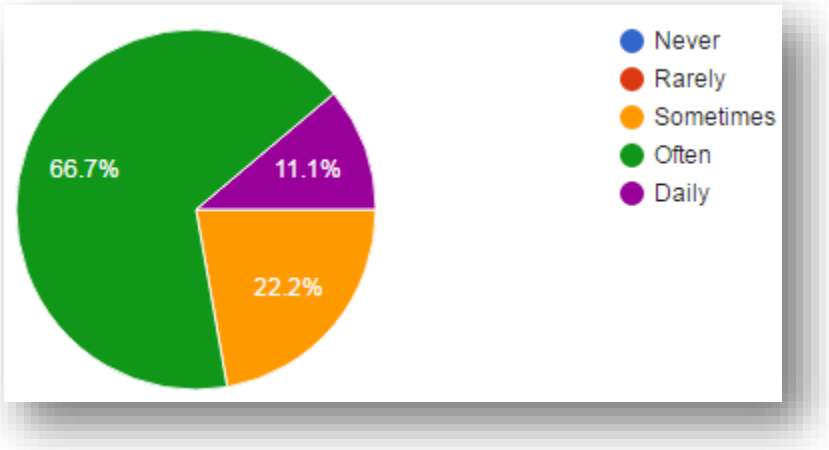


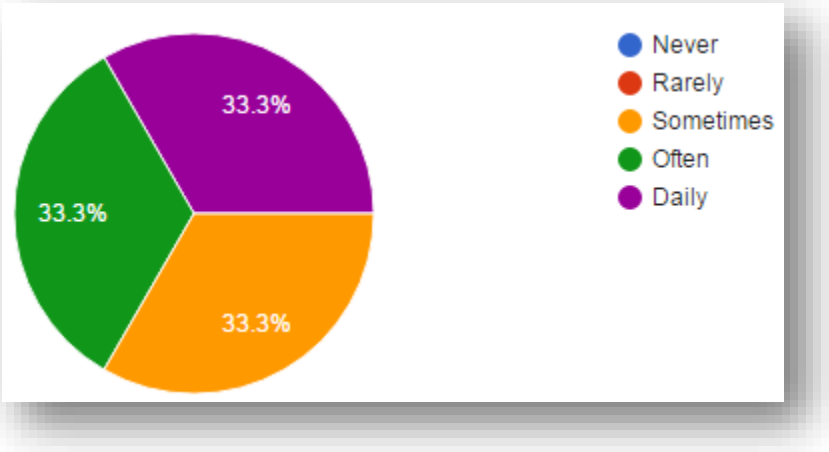


This data point shows that all subjects now report using leadership in their daily professional lives. First and foremost it is important to remember that one of my subjects dropped out of the study halfway through, which could account for part of the drop (as well as drops in each subsequent post-survey question). At least two other explanations exist. One is that learning the SATs gave them confidence to use leadership more often. Two is that, similar to question #1, their daily work life changed and simply required them to use leadership more often regardless of the SATs. A control group might have help answer

questions like this. However, due to the small pool of subjects available to me, I elected to not use a control group in order to obtain more data on the experimental group.

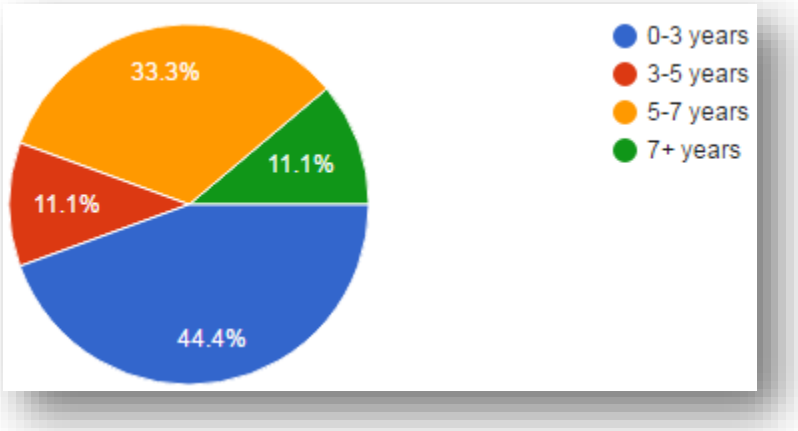
5. How often do you use leadership in your personal life?

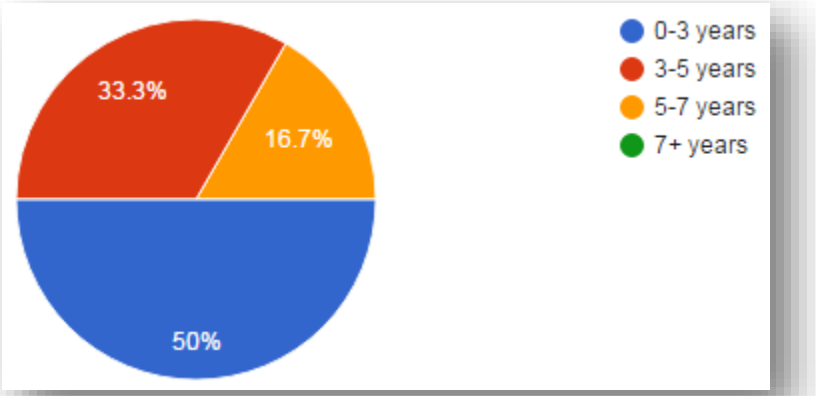




I had the same reasons for asking this question as I did for asking question #4.

6. How long have you known about and understood SATs?[61]

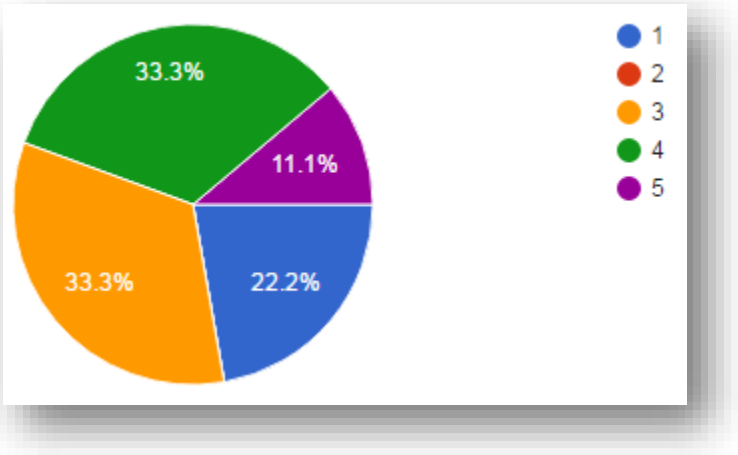


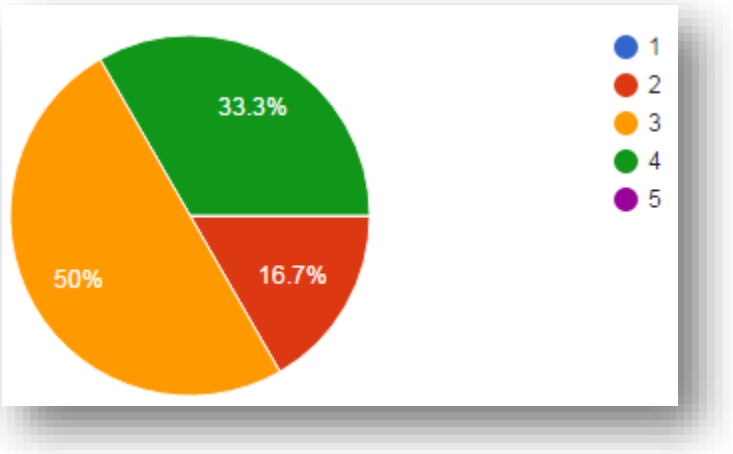


Most significant here is that the more experienced numbers either dropped or disappeared completely. Maybe the subjects *thought* they knew about SATs until learning about them from the lessons. Also, they could have forgotten what they originally answered.

[61] In hindsight, I should have clarified the answers to this question to allow for a "none" option, thus enabling me to view who, through this study alone, were experiencing SATs truly for the first time. "0-3 years" is the closest I get here, which can only provide limited data for my study.

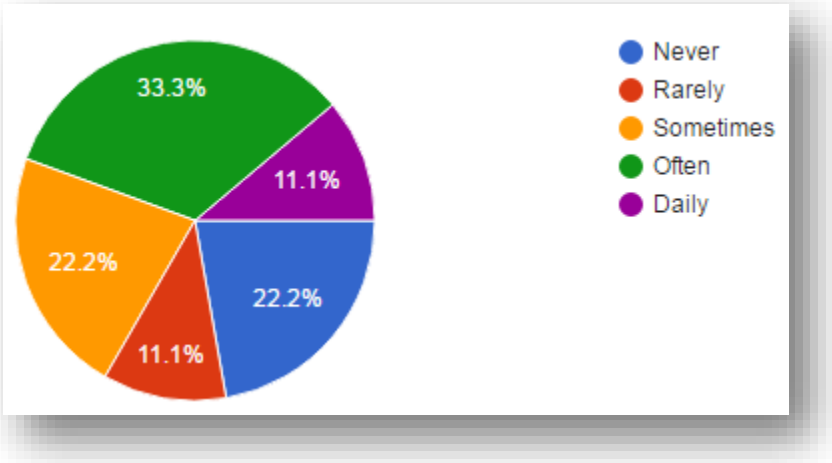
7. On a scale of 1-5 (1 being the weakest and 5 being the strongest), how would you rate your skill level with SATs?

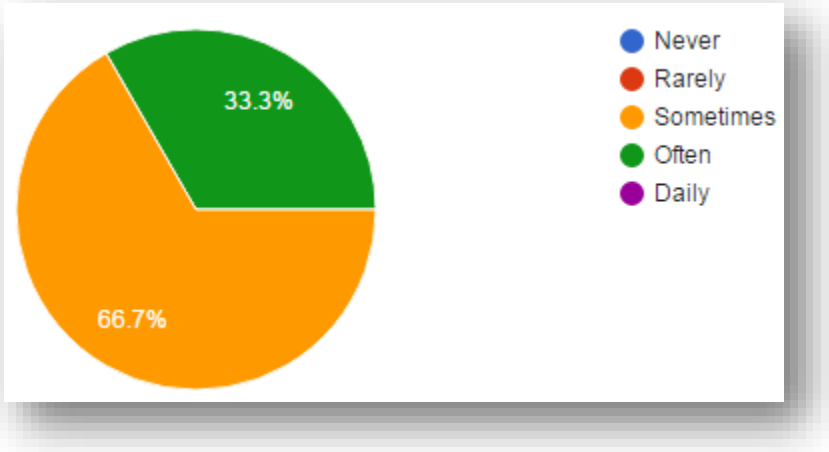




The two significant numbers here are the movement of "1" to "2" in between the pre- and post-surveys and the disappearance of "5" in the post-survey. It is likely that the introduction of the SATs caused the subjects' perceived increase of skill levels.

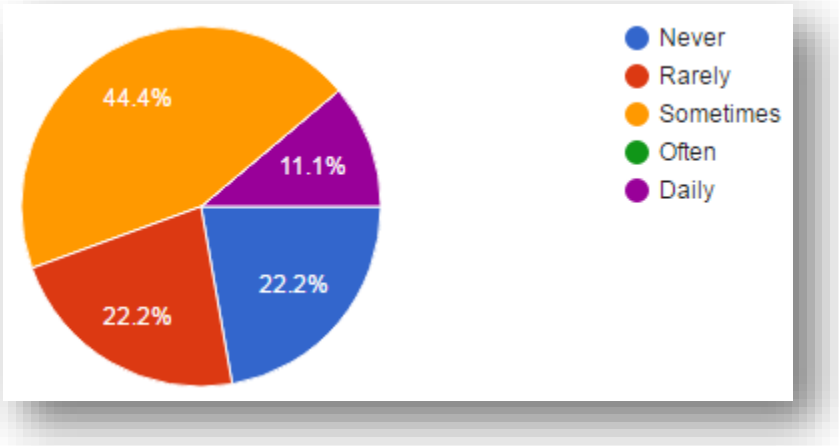
8. How often do you use SATs in your professional life?

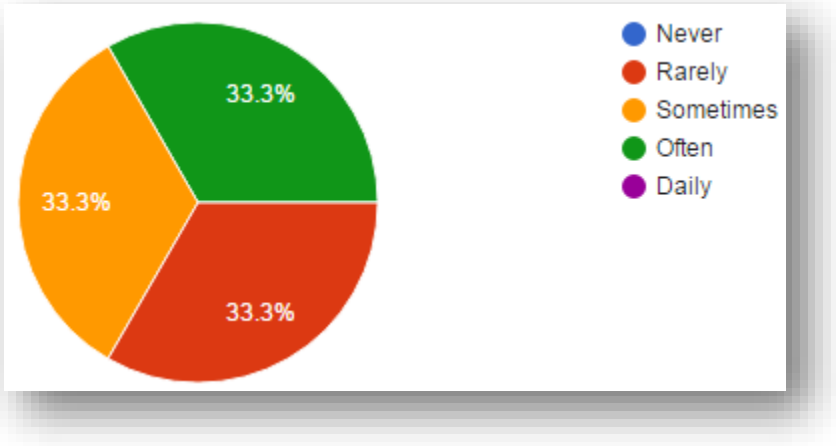




This shows that the subjects who never or rarely used SATs in their professional life all use them now either sometimes or often. Also, the daily user of SATs disappeared, similar to #7.

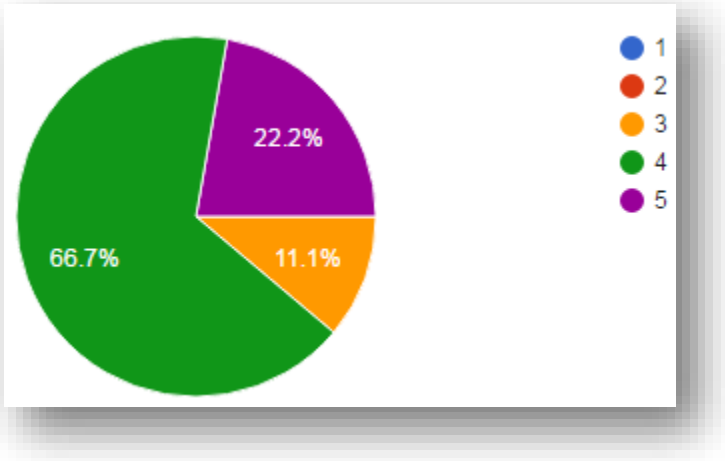
9. How often do you use SATs in your personal life?

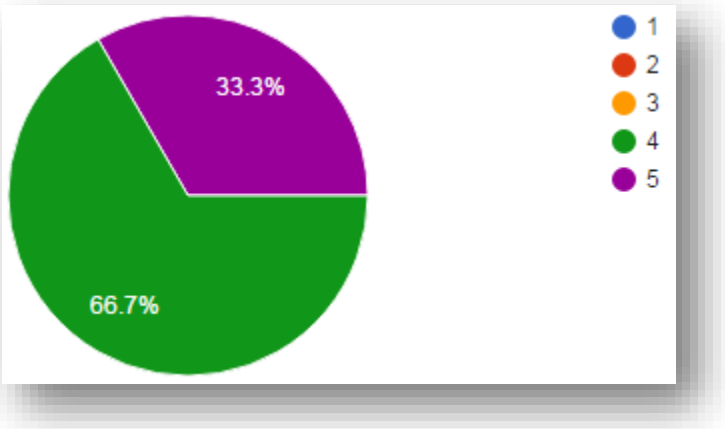




Here, two people, up from zero, reported using SATs in their personal life "often" after learning about them. Realistically, this number's significance is unclear without further investigation. The best case scenario is that the subjects felt a significant increase in the helpfulness of the SATs and decided to start using them "often" in their lives. The worst case scenario would be that the subjects answered "often" simply because they agreed to learn and practice SATs for the study.

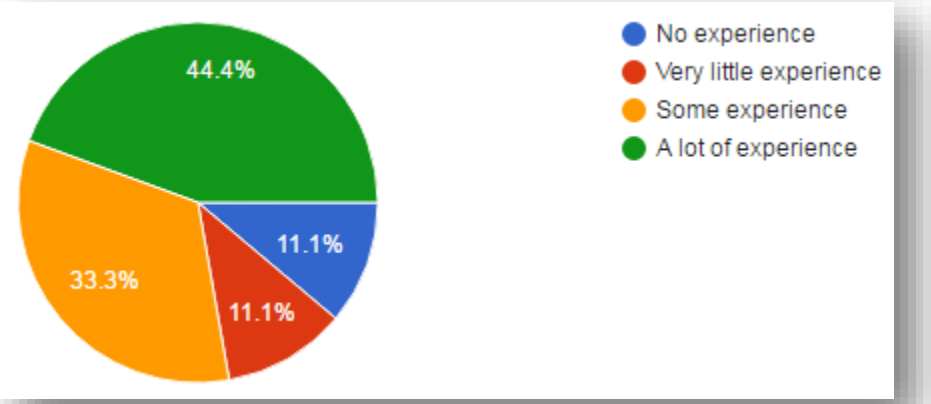
10. On a scale of 1-5 (1 being the weakest and 5 being the strongest), how would you rate your ability to quickly and effectively learn something new?

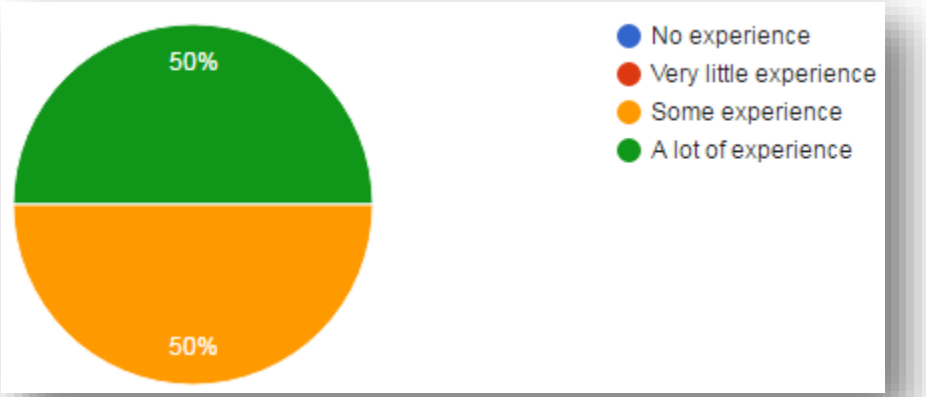




This question gave me a baseline from which to start my analysis. The post-survey shows us that the learning SAT did not appear to help most of the subjects learn how to learn. Most felt they already knew how to do this.

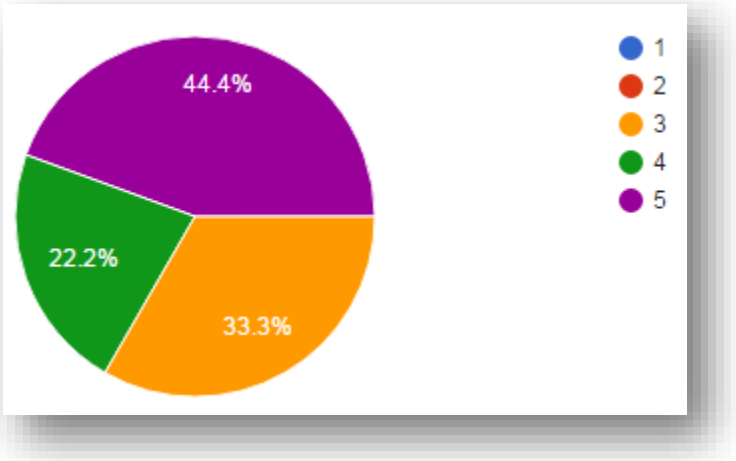
11. What is your experience with structuring your learning experiences?

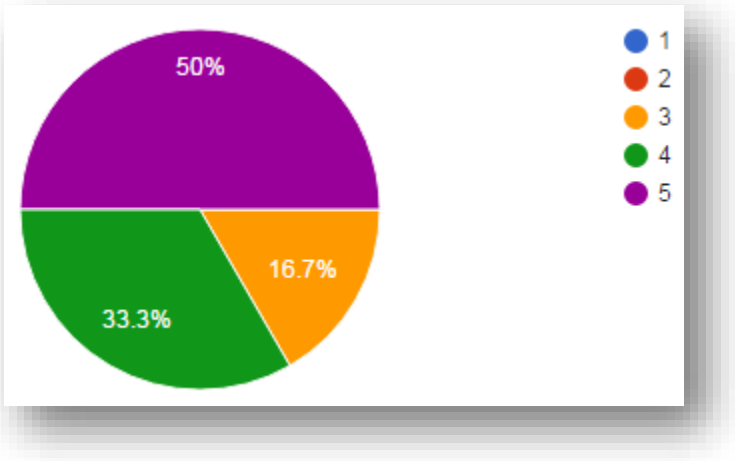




Here I wanted to get a feel for how many of my subjects already had at least some experience with structured learning. The post-survey reveals that those with no or very little experience now have either some or a lot of experience with it.

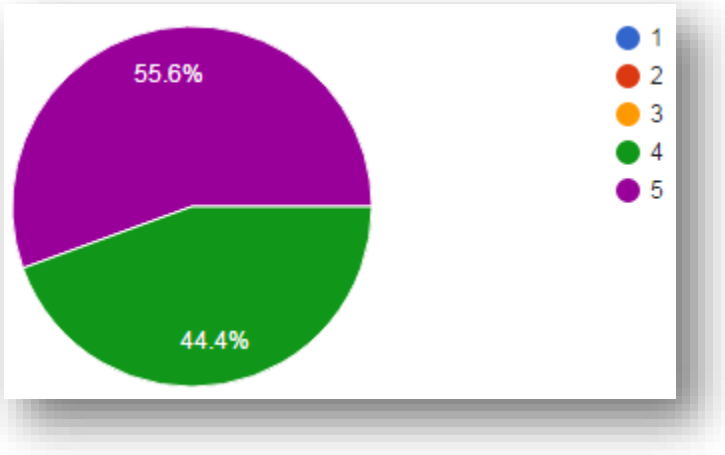
12. On a scale of 1-5 (1 being the weakest and 5 being the strongest), how would you rate your ability to think strategically?

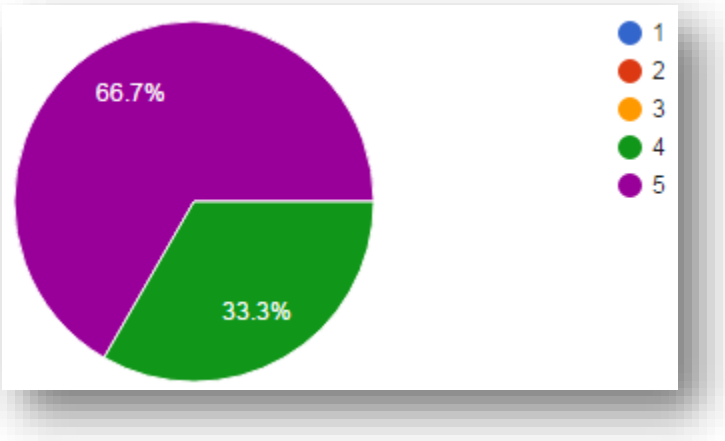




Similar to question #10, this and the next question are baseline questions for Strategic Thinking and Execution. The post-survey reveals some growth in the subjects' perceived abilities (fewer 3s and more 4s and 5s).

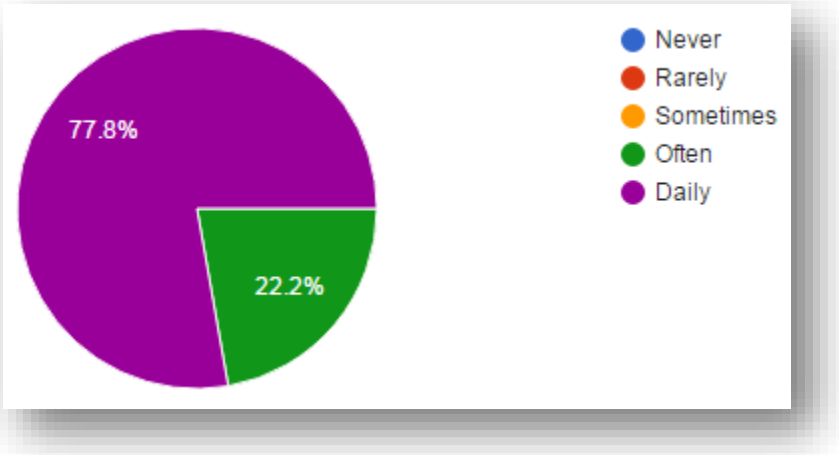
13. On a scale of 1-5 (1 being the weakest and 5 being the strongest), how would you rate your ability to execute tasks given to you?

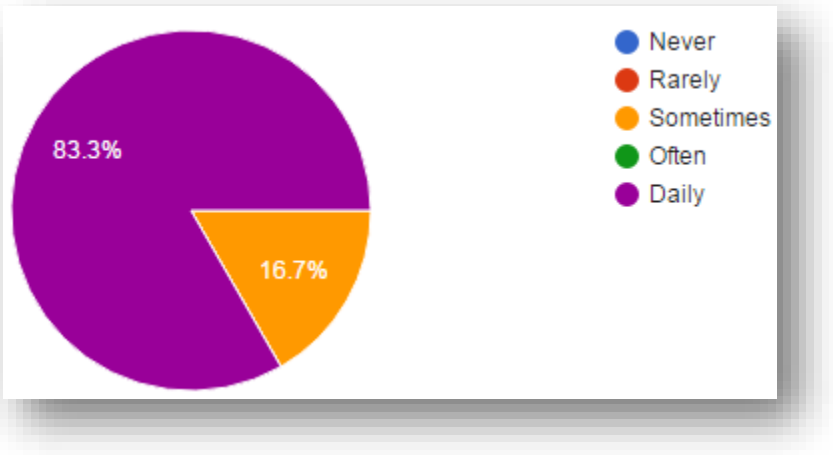




Similar to the Learning SAT (#10), the Executing skill didn't change much, because most of the subjects feel that they already know how to execute tasks.

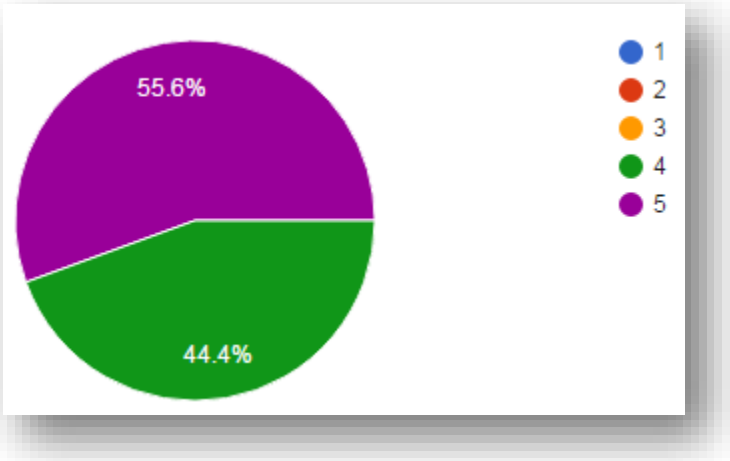
14. How often do you execute tasks given to you?

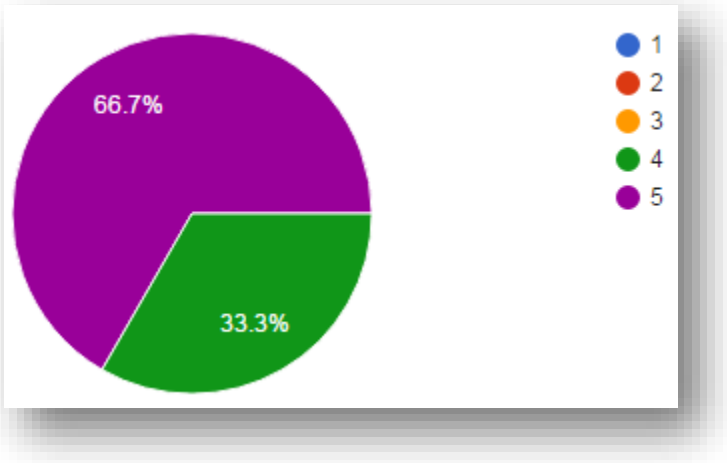




This shows that all the subjects execute tasks, whether it is daily or somewhat less frequently. Similar to other questions asking about SAT or leadership usage frequency, the SAT lessons may or may not have had any influence on the subjects' using these skills. The changes could be because of a change in jobs or because they forgot their previous answers.

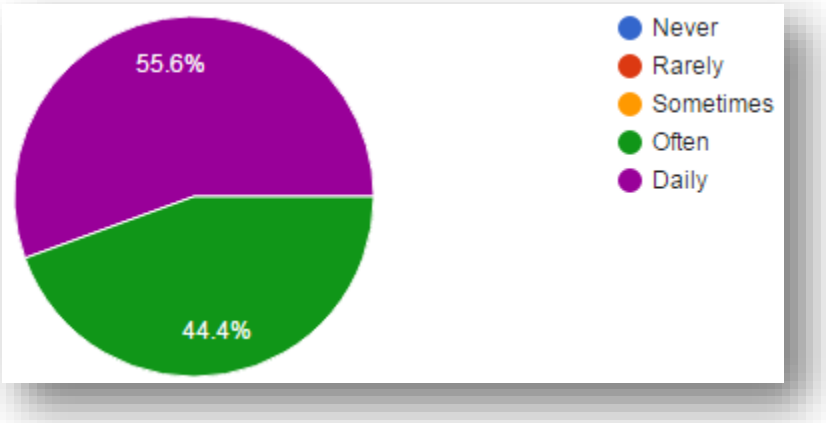
15. On a scale of 1-5 (1 being the weakest and 5 being the strongest), how would you rate your ability to lead task execution?

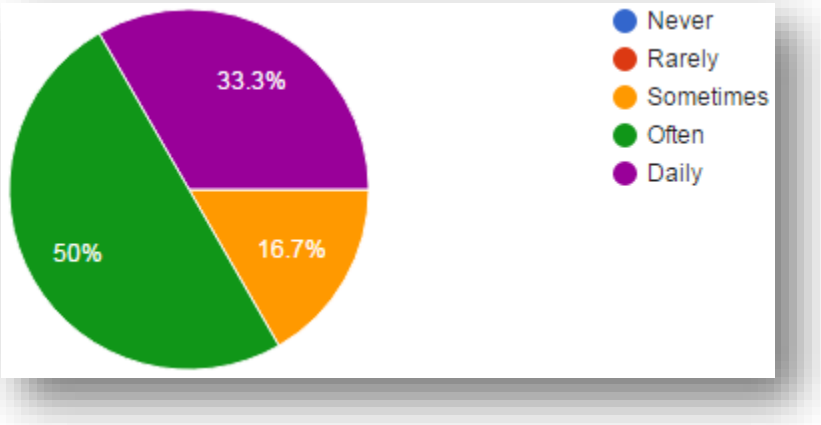




This questions shows that, similar to question #3, the subject's assessment of their ability to lead task execution increased. However, also similar to question #3, this may or may not have been related to their learning of the SAT. A control might have been useful for this question as well.

16. How often do you lead task execution?





See question #14 for similar analysis, but the numbers for leading task execution only varied slightly.

This concludes the data from my quantitative surveys. A quick recap of the most significant data is:

- Neither Learning nor Execution skills had significant change, which is something I did not expect (#10, 13 and 15)
- There was some growth in perceived strategic thinking skills, which my hypothesis did predict (#12)

- Perceived overall leadership skills increased (#3)

Because I had so few research subjects for my study, and because one subject dropped out of the study halfway through, I did not have enough data to make any viable generalizations for my hypothesis. The numbers do not explain enough or tell enough of a story. This leads me to my qualitative results.

The following table contains my questions and my subjects' answers. Italicized questions are my own follow-up questions. Bolded statements are my own comments to the subjects' answers. Also, to provide a quick reference to my subjects' responses I have highlighted each of their response boxes red, yellow, or green depending on whether or not they felt each SAT helped them. Two of the three subjects interviewed consented to me disclosing their names in this study. I have changed the other's name per his request.

Question	**Bergeron Responses**	**Indy Responses**	**Ritter Responses**
Do you feel the structured learning SAT helped your leadership skills overall? Why or why not? How much?	No, I don't think that the SATs helped my leadership skills. I really focused on posturing myself to recognize to use the SATs. An example would be when I come across an issue, typically it would be for a project or approach to a problem, I would make the conscious effort to say, "Okay wait, before I jump into solving	Yes, I do feel like this is a useful SAT. Now that I think about it, most of Air Force Training is based on this construct. For example, the 4 designated positions in a Processing, Exploitation, and Dissemination (PED) node each has their own key skills that you need to learn to progress to the next	In terms of leadership, I don't think the structured learning approach changed my approach to leadership. I think part of it is because my job at the time I did this SAT involved me doing a lot of individual technical tasks that required me to learn a lot of information, so it definitely impacted my personal learning,

	this, lets focus on HOW to solve this using a specific method." **He does not think SATs helped his leadership skills.**	position. Once you have mastered all 4 positions, you are considered fully combat mission ready. Also, as a course director of a counterterrorism skills course, we take a phased approach of starting with data management on day 1 and then progress through the various INTs that help you do Activities Based Intelligence (ABI)/Forensic Network Analysis (FNA). These include HUMINT, SIGINT, ISR collection Principles, OSINT. We do a capstone that encompasses everything learned in the course throughout the week	but the leadership aspect of my job was largely management of other teams doing detailed technical work, and I'm not sure learning techniques impacted that. **The Learning SAT helped him learn, but not lead, better.**

		and finish with the Production and Communication block where we teach how to produce products and brief within the establish standards for support of a specific customer. **He does feel it was useful, but he does not specify whether or not he feels it helped his leadership skills or some other skill.** **Also, the Air Force is already using a form of the structured learning SAT to teach in many of its courses. However, it is not teaching members the SAT**	

		itself. So this might seem familiar to 14Ns.	
Do you think the structured learning SAT improved your learning skills? Why or why not? How much?	No, it takes me a long time to organize information I'm trying to learn and it didn't jive with how I organize information to learn. It has taken me a long time to understand how I learn and START to process information... I'd much prefer to continue to hone the methods I've been using than integrate new ones... at least for the time being. Hopefully this makes sense... and it might just be that I'm dug in. I will admit it.	Yes, I think it does in the sense that it helps me learn the tradecraft that's very specific to the office I work in. Though I'm not an analyst that produces the assessments, it's important for me to understand how each team does their tradecraft and their version of ABI/FNA. To fully do this, I had to take the ABI Course, take the Leading ABI course, go through the course I am directing (Counterterrorism Common Skills) and actually sit down with each of	I think the SAT codified a lot of things that I was already doing, based on previous professional/academic education and just experience. During this SAT, I was working on a project where I had to be well versed on a fairly complex network of connected ISR systems, and the idea of compressing knowledge, and then adding detail to macro concepts, definitely helped this process. Keeping focus on the macro of the problem set is also

	He admits to possibly being set in his ways when it comes to learning. If I were to have used this much sooner in my career I believe it could have had more of an impact but I find myself feeling "rushed" or "too busy" to take "as much time" as I want to think through problems/learn something… the "80% solution today is better than 94% solution tomorrow" mentality. I felt this especially true when I recently went through a	the different teams to find out what types of training they need to do their specific job. These are all very structured courses that gradually bring you to understand the ABI/FNA methodology. Even then that just provides you a baseline; you have to continue to learn new tools and ways of thinking to go after an ever changing adversary. For example, targeting an ISIL affiliate is different from targeting an Al-Qa'ida affiliate.	useful to make sure you don't forget important facts and get bogged down by detail. **It might be a trend that most 14Ns, if not most AF officers or personnel in general, are used to following or being taught via the same method as DiSSS and CaFE.** **Compression, from CaFE, helped him, and he gives concrete examples.**

	formal intelligence training course within the past few months. **He suggests the possibility that learning SATs earlier in one's career helps leadership development.**	**He has to learn a lot because he is leading the teaching of a course. To effectively lead it he needed to learn about other, related aspects of the intel surrounding his course. The learning SAT helped him to better learn the course he is now in charge of.**	
Do you think the execution SAT improved your execution skills? Why or why not? How much?	Yes, it helped me to add in a perspective that I might have otherwise neglected. Making a conscious decision to utilize, or not utilize, one or more SATs helped me to get to the 80% solution more efficiently.	Yes it has and I've been doing this my entire 10 years in the military without even realizing it. One project I am working on deals with recording parts of the Counterterrorism Common Skills Course to help relieve some of the	I think breaking down task completion to show linear relationships is a good technique. I've previously used a matrix similar to the "swim lane" to frame tasks in the past. For this project I was working on staffing

	The Execution skill added additional perspective.	burden of instructing on my division. I am working with my Analyst counterpart to schedule out which portions need to take priority and which portions we absolutely have to have dynamic instructor facilitation to instruct effectively. We are also creating videos that demonstrate routine analytic tasks in a 1 minute video format and posted to a YouTube like server in the college. *So just learning about the swim lanes SAT helped you learn how to execute projects better? How have*	an approval for an ISR operation, and this method helped frame the problem. **He uses a concrete example of how a swim lane helped him, though he already knew about them.**

		swim lanes helped move this project along easier/better? Yes, it made the process more efficient and structured.	
Do you think the execution SAT improved your leadership skills overall? Why or why not? How much?	No, it didn't influence how I interacted with any of my troops.	Yes it did slightly. I say this because I was already doing this. All leaders need to prioritize and set milestones in completing an overall task. The target development strategy in each of the counterterrorism teams is essential to actually discovering the actual HVI's in a network. If the teams didn't have any kind of structure, then they would not be	In my job at the time of the execution SAT much of the "executing" I did was as a part of a team, and not so much as a traditional leader. However, I think the swim lane technique is a good way to explain complicated organizations to outsiders/senior leadership, so in that way it contributed to my leadership as a

		successful. You can also determine if you are going down a rabbit hole if you utilize [this] SAT or if you need to cross-talk with another organization to get what you need. **He lists some possible reasons why swim lanes can improve leadership skills: it helps a leader provide structure, priorities and milestones.**	representative for my flight to the squadron leadership. **Here is another concrete example. Swim lanes helped him represent his Flight to the Squadron.**
Do you think the strategic thinking SAT improved your strategic	No, but it's hard to say. I have used a lot of the SAT methodology long before I learned they were called SAT. For example, the	Yes it slightly improved it. The SAT helps you focus on the key aspects that keep your organization or mission	I was TDY at a school during this SAT, and the analytic techniques in this SAT were a useful way to think about some of the mission

thinking skills? Why or why not? How much?	"Key Assumptions Check" in the diagnostic technique has LONG been a part of my cross-check while working through problems since 2009 when I was down at the 94th Fighter Squadron as the Director of Intelligence. Prior to starting any briefing or training, we would always identify assumptions and either validate or invalidate them… but would then always call them out prior to starting the event. The same is true for indicators or signposts of change as well as quality of information check…	functioning. The SWOT analysis technique is useful and I have used it in my current job to determine best courses of actions to mitigate some of the weaknesses of conducting the Counterterrorism Common Skills Course. **He has used it directly with his leadership position. He already had some experience with it.** *Why only slightly? Is it because SWOT analysis is only one SAT, and therefore only addresses one strategic thinking issue? Or do you*	areas I had to demonstrate proficiency in during the course. While I'm certain the technique would work well for a more traditional intel problem set, in my context it worked well as a way to think about mission planning to recognize where I needed additional study and practice in order to execute tasks. The analysis technique in the reading for this one is not radically different from some of the mission planning templates I was provided by the AF, which definitely helped contextualize it.

	He doesn't feel SWOT helped his strategic thinking skills.	*think there is some other reason entirely why it only slightly helped?* The slightly was referencing from my current understanding of SAT versus what I know now after reading the material and applying it. I already have experience in doing this.	**He gives good examples here of even being in a classroom setting and SWOT analysis still being useful.**
Do you think the strategic thinking SAT improved your leadership skills? Why or	No, again, been working with many of the SAT concepts for past seven years. I can see how it could be useful to structure the way individuals think when they approach leadership challenges.	Yes it slightly improved it for the same reasons as above. I think the SWOT technique can apply to a lot of different jobs as a 14N, whether you are working at a National Intelligence Agency or	I think the awareness of an organization that the strategic thinking model drives you to is important for any leader. In the TDY I was on, I wasn't a formal leader but I served as a defacto

why not? How much?	**The SAT didn't help his leadership, but he suggests that it might help others.**	working in an Intel Flight of an Operations Support Squadron. By doing a SWOT analysis, you can better advocate for increased funding, training, or more manpower. For example, I came across a resume of a USMC SSgt (E-6) Reservist who has experience working with the tools we teach in the Counterterrorism Common Skills Course and is a trained Strategic Debriefer. I submitted the requirement to have him come on active duty to improve the course, particularly the HUMINT block.	mentor to a group of 9 younger CGOs, and thinking about the scenarios we were being instructed on in this way gave me an opportunity to recognize threats and weaknesses, and prep the class for them before they came up as a negative in training. **SWOT analysis helped him think strategically about the course he was in. He gives an example of how he used the SWOT technique to help the classmates he led.**

		He gives an example of how using SWOT analysis could help a leader: it could help him know when to request extra assets. *How (if at all) did SWOT analysis help you here?* I used the SWOT analysis to analyze my HUMINT[62] block. One gap to make sure this course is good enough for an	

[62] Human intelligence is any intelligence derived from human sources.

		NGA[63] College course is if this would be useful to an actual HUMINT analyst/debriefer. We are trying to create a version tailored to HUMINT professionals without a GEOINT background.	
How much "homework" on each SAT lesson did you do? Do you think that affected how much you did or didn't learn?	I did my homework, did the readings, looked through the concepts and made an active attempt to incorporate these. I just didn't have the passion for trying to incorporate a new way of thinking since my approaches haven't OVERTLY failed. If I	Actually didn't have to do too much homework. I just applied it to my daily job when applicable. Most of it I was already actually doing without realizing it was a SAT.	I did the reading for each SAT, though I think got ahead of myself on the first two because I had some free time. I didn't do all the additional reading, and there were times when I didn't do the exercises as explicitly called out in the survey, but used a similar

[63] National Geospatial Intelligence Agency – this is the national intelligence agency that deals with geospatial intelligence (GEOINT), the various forms of imagery.

	were to come to a point in my career that I was no longer effective at leading/problem solving, I would then look to overhaul how I approach problems. Until then, I will focus on “starting with the heart” and let the 12 years of AF training (including my AFROTC cadet experience) kick in. **He was not motivated to really change behavior since his way of doing things has never overtly failed.**	*How did (or didn’t) realizing they were SATs help you do them better and/or more often?* I would say more often now because I’m consciously aware of the SAT now. Kind of similar to the FRLM that you learned in SOS. By time I took SOS, most of that I have already applied but didn’t have a name associated with it. It would definitely be beneficial to teach SATs earlier in an officer’s career than later. It also helps you develop better habits.	technique. I remember for the execution, specifically, I have a variation on the "swim lane" diagram that gets to the same point but just suited my specific task better. **Even doing the bare minimum learning for each SAT helped him to learn and apply it.**

How do you think your past (professional and/or personal) experiences could have affected your ability to learn and use these SATs or your leadership abilities?	Mucho! Having been in the AF for the past eight years, I have been afforded many opportunities for mentors to influence the way I think, and the personal connection I had with them is much more ingrained in how I think/approach problems because that means much more to me than what I am learning from a primer. **People teach leadership better than SATs teach leadership. People teaching SATs AND leadership might have much more potential.**	Yes, my experience helped to learn the SATs quicker. Mostly because I could already relate to using the SATs without knowing the formal name. **14N experience with SATs could facilitate the quicker learning of SATs, and possibly improve leadership skills quicker.**	I'll freely admit I'm somewhat skeptical that it's possible to adopt completely new techniques for analysis and problem solving, but I found most of the things suggested in the SATs were pretty similar to things I was already familiar with. I'm not especially disciplined about organization, and the thing I like about SATs is that using structured thinking techniques seems to contribute to not forgetting things. Dynamic jobs make it sometimes difficult to establish repeatable habit patterns, which has definitely caused me to

	Simply put, I will always value feedback from in-person mentorship than that on paper… even if it is from a valid source. **Personal connections with mentors helped develop leadership better than "a primer."**		make a few mistakes, but if you can approach disparate problems with similar problem solving techniques that seems to mitigate the issue. **He confessed to initial skepticism about the SATs, but admits that they seemed to help him. He also suggests that learning and using the SATs have a carryover effect to something else (memory). If it has a carryover effect for one skill then it is reasonable to**

			suggest that it could carry over to another skill (leadership).
Please describe your 14N career thus far.	Goodfellow AFB → 1st Fighter Wing out of Langley AFB, sat the deputy chief of analysis for 6 months then went to 94th Fighter Squadron (Hat in the Ring Gang!) for 20 months and deployed many times, once was to the United Arab Emirates. Then PCA'd [moved to a different unit on the same base] to the 15th Intelligence Squadron on Air Combat Command's (ACC) campus where I became the	In my Military OIC job, I deal with admin requirements for approximately 45 joint military personnel (Active/Reserve/ANG) for the Office of Counterterrorism (AOT). I submit reserve requirements annually that support AOT functions. Deal with OPRs/EPRs[68] and the various service equivalents. The other part of my job is that I run the NGA Counterterrorism Common Skills	Most of my experience is in SIGINT, but with some experience in acquisitions. I'm actually coming to the end of my time as a primary 14N, and I'll be doing RPA[72] operations for my next job. My career arc was a little backwards--I was a deputy flt/cc with a lot of airman to supervise from day 1 as a 2Lt, and I was a Flt/CC with about 150 airman as a young captain. During my second

[68] Officer Performance Reports/Enlisted Performance Reports – these are the annual performance reports for both officer and enlisted airmen.

[72] RPA = remotely piloted aircraft, aka drones.

	ACC Standardization/Evaluation[64] subject matter expert and focused on Staff Assistance Visits[65] across the Combat Air Force[66] to help units be aligned with the regulations the smartest ways possible. I deployed to Afghanistan as the IJC[67] ISR Operations Officer-In-Charge (OIC) for 7 months and learned tons about leadership,	Course. I manage a new course to help new analysts learn skills, techniques, and tools that help perform counterterrorism network analysis. My previous experience includes 3 years Mobility AF Intel support experience at Dover AFB as the Deputy Chief of Wing Intelligence (CWI) and acting CWI. I also spent 4 years at Langley AFB in 36 IS[69] and 15	assignment, I was a Flt/CC and ADO[73] on paper, but with the exception of deployments I was doing a lot of hands on work myself, and not supervising that much. *So your first job was command a SIGINT unit. What and where did your second job take you?*

[64] Standardization/Evaluation assignments denote you are evaluating other unit's or personnel's ability to accomplish the mission.

[65] Staff Assistance Visits is when those leading other airmen visit their shop and offer suggestions on how to do their job better.

[66] Combat Air Force refers to the Air Force commands whose mission centers on strike or attack missions, rather than mobility or transport missions.

[67] IJC = International Security Assistance Force Joint Command. This is the command center of the four military branches in Afghanistan.

[69] IS = intelligence squadron

[73] Assistant Director of Operations = the ADO is often the frontline supervisor to the supervisors, engaging with Flight commanders regularly.

	requirements, and ISR. PCS'd [moved to a different base] to Kent State AFROTC for 3 years and just recently PCS'd to Creech where I'm the Chief of Wing Intelligence Training for 432 intelligence bodies.	IS. I led the Combat ID/VISRECCE[70] flight and the Analysis and Reporting Flight that supported COMACC[71]. I stood up the internal Stan/Eval program for 15 IS.	My second job was doing system testing and acquisition as part of Big Safari, at the 645th AESS[74] in Greenville, TX (just east of Dallas). The squadron's main role is to execute depot level maintenance and upgrade on the RC-135[75] and associated systems. As an intel guy I did some work with the collection systems, but was largely involved in the network and comm [communications] side—I did a lot

[70] Combat ID/VISRECCE = visual recognition. This is the skill of identifying what a piece of equipment is visually.

[71] COMACC = Commander, Air Combat Combat. This is a four star general position in charge of all the CAF (see note 58).

[74] AESS = Aeronautical Systems Squadron.

[75] The RC-135 is an intelligence-gathering aircraft.

			with secure networks, but also full-motion video as well as making sure the jet and the associated ground support equipment was interoperable with DCGS and the AOC[76]. Since I was the loan true 14N there, I was a Flight/CC and later director for a shop staffed by enlisted intel troops and contractors, a lot of what I did was mostly me interfacing with the contractor and working my leadership to do tech evals and decide what capabilities we wanted to fund. A big part of

[76] AOC = Air Operations Center. This is the location that coordinates all air activity in a given area.

			that was me having the operational experience of what ISR capabilities actually were used in the field, and steering my leadership (mostly engineers/program manager types) in the right direction. It helped a lot; I got to deploy several times to keep current on real world missions while I was there.
	The answers to these questions reveal a breadth and depth (including some overlap) that I was hoping for in this study. These three 14Ns have a variety of leadership and intelligence bona fides that provide unique perspectives on whether or not SATs might improve a 14N's leadership skills.		
Please describe your personal	I used them briefly when I agreed to take part in this study and have looked to apply it as many times as	I have extensive experience in using them but didn't know them as Structured Analytic	This was my first exposure to the SAT as articulated here, but many of the concepts were familiar to

experience with SATs so far.	practical. The following were SATs I have been using prior to learning about SATs: All of the Diagnostic Techniques *except* ACH (analysis of competing hypotheses), All of Contrarian Techniques except "High-Impact/Low-Probability Analysis, and all of the Imaginative Thinking Techniques. Just thinking through *when* I actively use these techniques, I realize now that so much of these SATs seem implied when you are conducting Mission Analysis, Pre-Mission Briefings, Joint Intelligence	Techniques. I remember first learning some of these at the US Air Force Academy. I have had to use them in every job thus far.	me. The one that I've found myself thinking about the most since the completion of this project is the SWOT analysis. I think that's an exceptionally sound way thru which to evaluate any task or problem. I know it's considered part of the strategic thinking, but I think it also works well for planning a more tactical scenario. I've used aspects of the SWOT model to help me mission plan for strike missions and ISR support to ground forces.

	Preparation of the Operational Environment, and the "targeting cycle" applied to any real function within Intel (targets or ISR). The real question is… how can each analyst determine when to use which of these techniques to ensure that we keep the enemy outside of our OODA loop[77] by making it smaller, faster, smarter.		**He gives examples of when else he has used SWOT analysis (his favorite).**
	All of my research subjects had some sort of SAT experience, whether implicit or explicit, extensive or minimal. This is typical for most 14Ns that graduated from training around 2010 and earlier.		

[77] OODA Loop is a decision making methodology invented by Col John Boyd, USAF. "OODA" stands for "Observe, Orient, Decide, Act," and is a continuous process. Boyd argued that good decision making wins wars more than technology does. By keeping our enemy outside of our OODA Loop, Capt Bergeron refers to making decisions quicker and more effectively than the adversary (think of each side's OODA Loop as circles).

But I mainly want to get a feel for if you feel like learning those SATs helped your different leadership skills at all, and if learning more SATs well has the potential to improve leadership skills.	If these are taught early… that would help and be the easiest to implement. The more difficult part is engaging this skillset "often" in any type of curriculum. Referencing back to these techniques or "FORCING" learners to cage an engagement with a specific method could work out well.		

What did I find in my analysis of the interview questions? Were there any trends or themes that I found in the data? First things first: the data was certainly less conclusive than I expected when I made my hypothesis. Nothing definitively declares "Yes, learning SATs will improve 14N leadership skills." Instead, my findings lead me to say that learning SATs can *possibly* improve 14N leadership skills. Consider the following facts and comments from my qualitative data:

- 5 out of 9 responses in the interview questions believed that learning the SATs DID help their specific skills (learning, strategic thinking and executing). Only 1 answered "no" definitively. See the table below.
- 3 out of 9 interview question responses answered "yes" to say that learning the SATs helped their general leadership skills. This is not the majority I had expected. In fact 3 of the responses also said "no". However, the fact that the yes and no answers have an equal number of responses reinforces my conclusion that learning SATs *may* help a 14N's leadership skills.
- The total number of responses (18) weigh heavily in favor of answering "yes" to the question "Did learning this SAT help you…?" The "yes" answers favor the "no's" 8 to 4. So whether they were explicitly leadership skills or not may not matter; learning,

	Yes (Green)	**Maybe (Yellow)**	**No (Red)**
Leadership-specific skills improved?	✓✓✓✓✓	✓✓✓	✓
Leadership-general skills improved?	✓✓✓	✓✓✓	✓✓✓
Capt Bergeron	✓	✓✓	✓✓✓
Capt Indy	✓✓✓	✓✓✓	
Capt Ritter	✓✓✓✓	✓	✓

Table 1: Tally of Qualitative Question Responses

executing and strategic thinking skills are all at least somehow related to 14N responsibilities.

- Learning may or may not be considered a leadership skill. Capt Ritter's answer to question 1 mentions that the learning SAT helped him learn, but not lead, better. This makes sense. Perhaps I put so much stock into learning as a leadership skill because of my own personal bias for it. Tim Rath's book *Strengths-Based Leadership* offers each reader the opportunity to take a quiz and discover their own leadership strengths. My #1 strength is learning. It is probable that my first thought for necessary 14N skills was learning came because of my personal passion for learning, not necessarily because of its importance to 14N leadership.
- Most of the "no" responses to the leadership-general questions came from Capt Bergeron (3/4). He also seems to be the one with the most prior knowledge and use of SATs at work. Capts Indy and Ritter have more middle-leaning answers (even yes-no split for Indy and 4-1-1 for Ritter). They both mention having used SATs previously, but not knowing they were called "SATs". It is possible that the more experience a 14N has with SATs, the less he will feel it improves his leadership.

CHAPTER V

CONCLUSIONS

In conclusion, it is without question that academia needs more data before it can make any sort of generalizations or theories about this hypothesis. It is certain, however, that two of my subjects found certain aspects of the SATs helpful in their leadership development. So I will say, regarding my hypothesis on page 5, that *the data does support my hypothesis somewhat, thereby disproving my null hypothesis.* I believe that this alone should be enough to warrant more study in this 80/20 area of analysis. It is intriguing that this one particular aspect of intelligence analysis might help improve the leadership skills of an entire career field, or even any managerial field, considering again McDowell's statement about intelligence leadership: "There are really no particular, special, or unique requirements for strategic intelligence management that set it apart from other management applications. What is needed, above all else, is good, supporting, applications of established, sound management principles."[78]

One situation where future studies could yield better responses and data is at the Air Force's Squadron Officer School (SOS). Located at Maxwell Air Force Base, Alabama, SOS is a five week professional military education course where all Air Force captains go for further leadership education and training. If researchers were to present, at the beginning of an SOS class (averaging 300 students in size) the opportunity to participate in a study similar to this, it is probable that they would receive much more participation than only nine subjects. Add to this the fact that there are several SOS classes per year and researchers have the potential to get much

[78] McDowell, 96.

more data than I gathered here. SOS is a good laboratory for this sort of study because researchers and instructors could teach, observe, evaluate, interview and debrief the participants – all in-house. They could also choose which officer career fields to study – intelligence officers, pilots, etc. Or, they could simply study them all at once. Two possibilities are to add some sort of test of SAT skills in order to add an objective, quantifiable measure of their improved SAT skills. And to objectively measure any improved leadership skills researchers could poll the officers' instructors and classmates with a similar pre- and post-survey to the one this study used. I recommend aggressive pursuit of this SOS option as a method to confirm or nullify my hypothesis. The costs would only be room and board for researchers on location (unless they assigned the study to someone already working on base); but the potential benefits would be enormous if this hypothesis has any truth to it.

Finally, and to put this study in proper perspective, I will share two quotes from my research that have impacted my thinking. They have to do with the crucial foundation upon which leadership techniques rest (SATs as one of them, possibly). The first is from McDowell again: "To put this book in perspective, it is noted that analytic methods are important, but method alone is far from sufficient to ensure analytic accuracy or value. Method must be combined with substantive expertise and an inquiring and imaginative mind. And these, in turn, must be supported and motivated by the organizational environment in which the analysis is done."[79]

The second quote comes from the late personal effectiveness leader Stephen R. Covey, in his book *Principle-Centered Leadership*: "It's almost axiomatic to say that personal change must precede or at least accompany management and organizational change; otherwise the duplicity and double-mindedness will breed cynicism and instability… Attempting to change an

[79] Heuer & Pherson, 6.

organization or a management style without first changing one's own habit patterns is analogous to attempting to improve one's tennis game before developing the muscles that make better strokes possible. Some things necessarily precede other things. We cannot run before we can walk or walk before we can crawl. Neither can we change our management styles without first changing personal habits."[80]

There are, perhaps, two parts to 14N (or any kind of) leadership: the character part and the skill part. The character part consists of just that, character. Is the leader honest, genuine, inspirational, hardworking, etc.? If not, the leader will not amount to much, no matter how "skilled" he or she is. However, there are certain skills that a 14N must possess that no amount of caring or being honest will make up for. 14Ns, to some degree, *must* know how to execute tasks and lead task execution. They *must* be able to plan for the future. They *must* have some people skills. Finally, they must be able to learn their jobs relatively quickly. If someone cannot perform these skills a satisfactory level they are destined to fail, or never become a 14N in the first place.

Coming full circle, there are two parts to 14N leadership – character and skills. A 14N cannot have one to the exclusion of the other. Would an Airman want someone leading her who is the nicest person in the world, but that cannot lead her in accomplishing tasks, or even worse, someone that cannot learn how to do his job? Consider the reverse: would she want a dishonest person leading her, even if he is an expert in his field? No. She needs both.

That is why I have developed a simple model that possibly describes the relationship between character leadership, skill (or techniques) leadership, and the amount of help that learning SATs could help one's leadership skills. Figure 1 depicts this relationship. Character leadership, as McDowell and Covey describe, is the bedrock. Without the right character, technique leadership

[80] Stephen R. Covey, *Principle-Centered Leadership,* (New York: Fireside, 1992), 284-285.

has no foundation and is therefore useless. But once a 14N has the character, she should start building the techniques to improve her skills even more. As SATs can potentially improve her leadership skills, the 14N should consider her experience with them. If she already has solid experience, then she could expect her leadership skills to improve but little. However, if she has little to no experience with SATs, it is possible, given the data from my subjects, that she has the potential to improve her technique leadership much more.

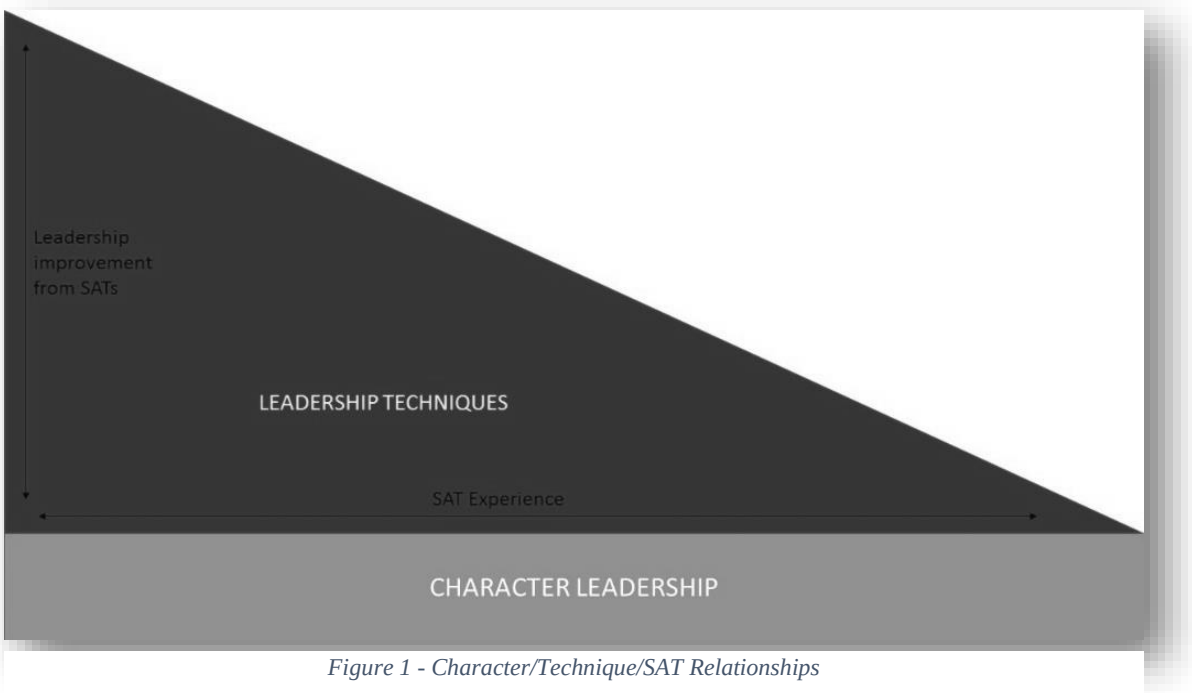


Figure 1 - Character/Technique/SAT Relationships

This study aimed to find ways to improve the skillset portion of 14N leadership. Without the character side of the leadership coin, the skillset side is useless. However, we cannot forget the other side. Once the 14N has character, these SATs have the very real possibility of improving the leadership skills of 14Ns, *or perhaps any leader anywhere.*

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Appendix A: 14N Force Health and Employment Figures

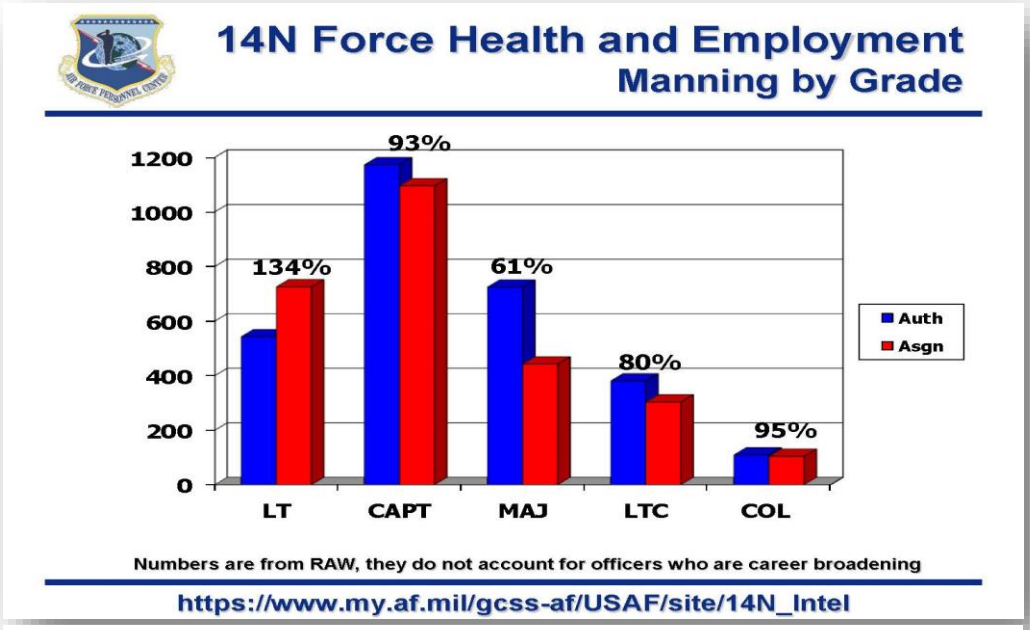


Figure 2 - 14N Force Health and Employment: Manning by Grade
Source: Air Force Personnel Center

[81]

[81] Air Force Personnel Center, "14N Spread the Word Briefing," https://www.my.af.mil/gcss-afbvpcp/USAF/AFP40/d/s88B4F00B2E8A8312012EB58372F0079E/Files/editorial/The%20Intel%20Spread%20the%20Word%20Brief%202017.pdf?channelPageId=s88B4F00B2E8A8312012EB58372F0079E (accessed March 16, 2017).

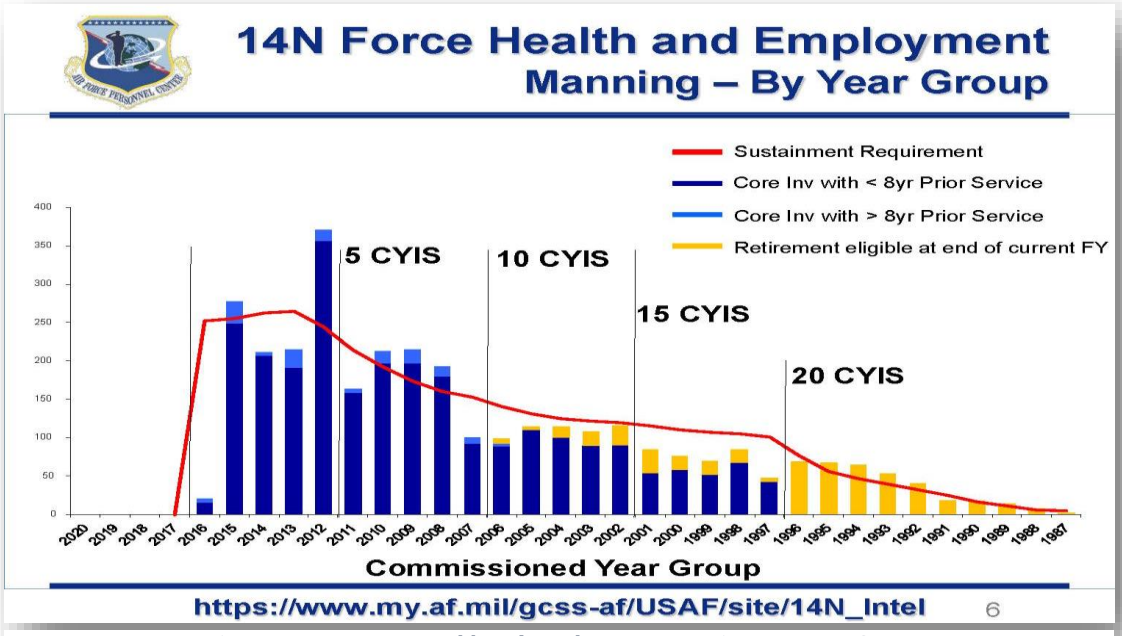


Figure 3 - 14N Force Health and Employment: Manning - By Year Group
Source: Air Force Personnel Center

[82]

[82] Ibid.

Appendix B: RAND Analysis, 14N Job Positions by Category

Table 2.1
Intelligence O-4, O-5, O-6 Positions, by Job Category

	Positions by Grade			
Job Category	**O-4**	**O-5**	**O-6**	**Total**
Joint (COCOMs, CSAs)/intelligence analysis	65	32	8	105
Joint (COCOMs, CSAs)/plans & programs	37	35	3	75
Air intelligence squadron/group	43	18	4	65
Information operations squadron/group/wing	34	18	8	60
Headquarters USAF/ISR	27	9	4	40
Joint (COCOMs, CSAs)/collection management	24	12	2	38
MAJCOM headquarters/plans & programs	26	8	3	37
HUMINT	17	8	7	32
Center/training	22	6	2	30
Fighter/bomber OSSs	30			30
Ground crypto squadron/group/wing	14	15	1	30
MAJCOM headquarters/plans & programs—ISR	18	9	1	28
FOA/DRU/AIA	15	8	4	27
POL/MIL (political military)	9	17	1	27
Joint (COCOMs, CSAs)/targeting	16	9	1	26
Joint (COCOMs, CSAs)/info operations	19	5		24
FOA/DRU/AFC2ISRC[a]	13	8	2	23
Headquarters USAF/plans & programs	12	5	3	20
Joint (COCOMs, CSAs)/IMINT	10	8	2	20
Joint (COCOMs, CSAs)/CC, CV, DO	1	3	11	15
MAJCOM headquarters/A2		2	13	15
Science & technology analyst	7	7		14
70th Wing/ISR	3	5	5	13
Joint, not COCOM/plans & programs	6	6	1	13
Airborne crypto squadron/group/wing	8	4		12
Generalist	7	5		12
Joint, not COCOM/analysis	3	8		11
OSSs heavy	11			11
Center/analysis	5	4	1	10
Joint (COCOMs, CSAs)/HUMINT	3	5	2	10
Air Force anti-terror force protection analyst	6	3		9
Deployable ground station squadron/group	8	1		9
Joint (COCOMs, CSAs)/SIGINT, IMINT, MASINT, HUMINT	4	4	1	9
Joint (COCOMs, CSAs)/education & training	4	2	3	9
480th Wing/DO	1	7		8
70th Wing/CC, CV, DO			8	8
Center/CC, CV, DO		3	5	8
Headquarters USAF/information operations	5	3		8
MAJCOM headquarters/analysis	5	3		8
Special operations support squadron	8			8
Miscellaneous job categories	69	40	10	119

[a] U.S. Air Force Command and Control, Intelligence, Surveillance and Reconnaissance Center.

Appendix C: Thesis SAT Lessons

Learning

SAT: Tim Ferriss's DiSSS & CaFE[83]

Introduction. This "SAT" isn't so much an analytic technique as it is a structured technique to aid in rapid learning. Tim Ferriss has dedicated much of his career to learning and teaching how to learn any skill. And as 14Ns are expected to learn any number of skills in order to lead intelligence professionals, we certainly need this one. For additional information on this system you can visit any of the links below, Google "Tim Ferriss DiSS" or purchase his latest book *The 4 Hour Chef.* But for now the two acronyms to remember are DiSSS (or DS3) and CaFE. If you're really pressed for time, focus on DiSSS rather than CaFE. DiSSS stands for Deconstruction, Selection, Sequencing, and Stakes. CaFE stands for Compression, Frequency, and Encoding.

Deconstruction. To deconstruct a skill means to break it down into separate, learnable categories or skills. How does a 14N lead a DGS or SIGINT Flight? The key is to take the responsibilities and break each one into skills that you need to learn. You're not learning yet at this point. Rather, you are discovering what to learn. For example, if a 14N is starting out at a fighter squadron, she needs to learn weapons system academics, threat knowledge, visual recognition (VISRECCE), research and briefing skills, etc.

Selection. Once you know what skills you need, you have to prioritize them. Selection assumes the Pareto Principle is in effect, also known as the 80/20 rule. If you focus 80% of your time and energy learning the 20% most important skills, chances are you will learn most effectively. Not all skills in each job are created equal. Selection based on Pareto's Principle reminds you to decide which ones to develop if you don't have time for them all. Of course, there are standards for everything. But once you meet those standards, where should you spend the rest of your time? One answer is to look at top performers: what do they do best?

Sequencing. Sequencing is the process of correctly ordering the skills you need to learn. "It's the burden on working memory that makes something easy or hard."[84] Therefore, to make learning something easier, it's best to learn "them" (whatever those skills are that make up your desired ability) in the right order so that you don't overtax your working memory. Take working at a fighter squadron, from the example above. Do you learn weapons systems academics first, or how to research properly? Do you learn threat knowledge first, or VISRECCE? If you can control it, order the skills by doing the following: 1) look at what the top performers do so well (the answer from **selection**), and use that as your *starting point*. 2) At this new starting point, figure out what the prerequisites are. Learn those prerequisites, build upon the skills you already have some experience with. This will a) ensure you are starting in the right place, b) reduce the load on your working memory, and c) give you more confidence while you learn.

Stakes. Stakes means that to help motivate you to succeed in learning your new skill, you need to make failing a really negative short-term event. Most of this is taken care for us in the

[83] This lesson is derived and sourced from *The Four Hour Chef.*

[84] Timothy Ferriss, *The 4 Hour Chef: The Simple Path to Cooking Like a Pro, Learning Anything and Living the Good Life,* 63.

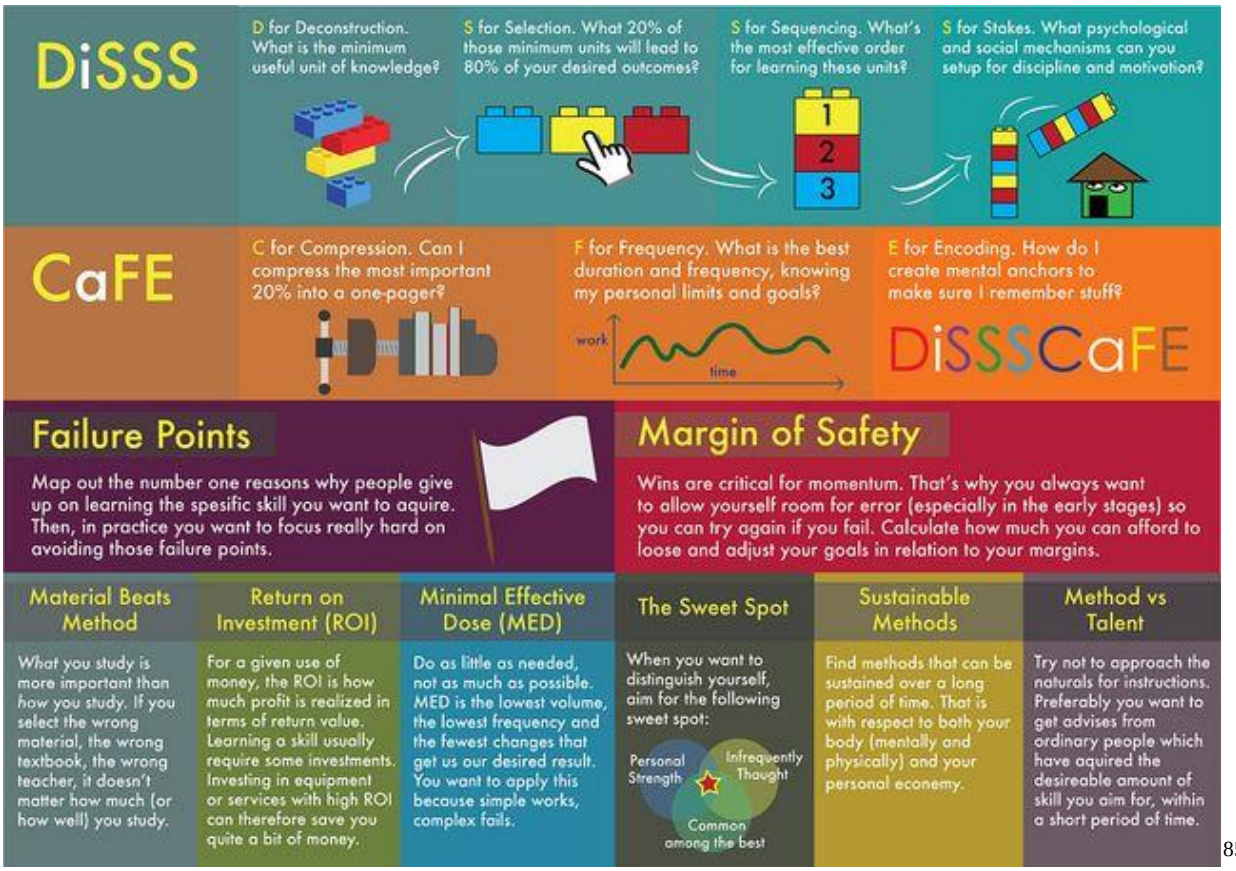
military; if you fail your training you aren't allowed to perform your job. But there are more options to use in unofficial ways to set stakes for yourself. You could publicly commit to a peer, your boss or your Flight to buy them all dinner if you fail to achieve an acceptable minimum grade. Research suggests that negative consequences are usually more effective than positive ones. Also, the more public and well-known your accountability system is, the better. So get creative and talk to people about it!

Compression. Compression is distilling your new knowledge into a one page cheat sheet. This forces you to put the most important concepts of your new skill into one location, eliminating waste. It's a natural distiller of knowledge.

Frequency. How often do you need to practice this new skill in order to learn it? DO NOT ask yourself "How much can I do?" because you already know the answer to that question. There is always something more to do in the world of Air Force intelligence. Rather, ask yourself "How can I schedule this learning process the best way given my constraints?"

Encoding. To encode is to help yourself to remember something. "DiSSS" and "CaFE" are perfect examples of encoding. They are acronyms to help you to remember how to learn a new skill. What rhyme or acronym can you come up with to help you remember how to perform your newly-acquired skill?

See the image below as a reference point for the concepts discussed here.



[85]

Homework

- **Minimum target:** Conduct DiSSS analysis on a new skill (one that you want or need to acquire, but still have not). (*Estimated time: 30 minutes)*
- **Suggested target:** Conduct DiSSS and CaFE analysis on a new skill and make a plan to put it into practice for the next month. (*Estimated time: 1 hour)*
- **Additional exercises:**
    - **Stakes.** Create some serious stakes for your new skill. Post it online or announce it in your shop. Get creative with it! (*Estimated time: 30 minutes to 1 hour)*

[85] https://www.flickr.com/photos/88406240@N05/10475165325/in/photolist-gXDXGH-fLcxNV-fLu9Ao-fKqwTd-fJCCXb-fJCCtf-fJm5K2-fJm8Bz-fGKsDz-fExEZT-fEkuUp-fE5gh4-fEjk6m-fqeeuv-f1FXJu-f1rDyg-em1X65-ekkrc1-e3gAcr-gvcW4a-gfLYoJ-fXu4CQ-fXunMH-fPCMao-fMWn8A-fLu9y3-fK8VTx-fK8Wwp-fKqw2o-fK8VFc-fJm5ng-fJCCs3-fJCDKw-fJm6mx-fJm5En-fH34A1-fH33v7-fH34Nm-fGKtZZ-fGKthp-fGc4C1-fFeqkX-fFumFw-fF9QuY-fExd8r-fEmufY-fDhsaF-fCV9Mm-funwyv-fpiyYZ-fpxPtU?utm_source=buffer&utm_campaign=Buffer&utm_content=bufferabc0c&utm_medium=facebook (accessed November 19, 2015).

    - **Create a condensed one-pager** for your new skill and share it within your unit, or better yet, within your MAJCOM or the whole intelligence community (IC). (*Estimated time: 1-2 hours)*
    - **Encode** this skill by coming up with a memorable jingle, acronym or illustration and share that as well. (*Estimated time: 30 minutes to 1 hour)*
- Supplementary resources:
    - Tim Ferriss Scoffs at Gladwell's 10,000 Hours: https://youtu.be/7k4kv2xW7JM
    - http://www.businessinsider.com/tim-ferriss-disss-system-to-learn-anything-2015-3
    - http://fourhourworkweek.com/2013/05/20/accelerated-learning-techniques/
    - http://www.kevinrandom.com/disss-and-cafe-tim-ferriss-approach-to-quick-mastery-of-any-topic/
    - http://addicted2success.com/success-advice/tim-ferriss-shares-his-4-ways-to-master-any-new-skill-this-year/

Executing

SAT: Swim Lanes

Introduction. Executing, as a leadership skill, is not unique to 14Ns. Rather, it is a skill any leader (let alone any good employee) needs to know how to do well. But from a leadership standpoint, executing is the skill of leading people in the completion of tasks, whether large or small. Swim lanes is a SAT that organizes how your team will accomplish this. If it's just one person completing a small project, then a swim lane is nothing more than a schedule of what you plan to accomplish and when. But as a project gets more complicated and involves more people and organizations, swim lanes is a helpful way to organize all the moving parts. Each of the readings in the supplementary resources section provides insight on how to make swim lanes to help you execute in the best possible way.

Homework:

- **Minimum target:** Read the Minnesota Department of Health and MindTools guides in the supplementary resources and build a swim lane for one of your work processes or projects. (*Estimated time: 1 hour)*
- **Suggested target:** Read the rest of the guides in the supplementary resources section and practice using two levels of detail for one of your projects or tasks. Decide which level works better for you or your team in this and other situations and why. (*Estimated time: 30 minutes to 1 hour)*
- **Additional exercises:**
    - **Count the cost.** Since swim lanes have the potential to reduce waste in processes, choose a team process that you feel could become more efficient. Conduct a swim lane analysis on it and identify potentially wasteful steps in it. Use those ideas to brainstorm better ways to do it. Try it out and count how much, if any, time you have saved as a result of this exercise. (*Estimated time: 1 hour)*
    - **Team tryout.** After teaching them how to do it, have members of your team simultaneously try drawing a swim lane for a set process. Compare the results of each person's perspective. Repeat the exercise, but have them draw the process as they believe it *should* run. (*Estimated time: 1 hour)*
- **Supplementary resources:**
    - https://www.niatx.net/PDF/PIToolbox/swimlane.pdf. This shows a good example of a very detailed swim lane. There is no need to make all swim lanes this detailed. Remember your audience when making swim lanes. Is the swim lane for a boss to see, or for a subordinate? For someone inside your organization, or outside? The swim lane should change accordingly.
    - https://leancor.com/blog/how-to-create-a-swim-lane-diagram/. This is a good resource to read because of its emphasis on teamwork while creating swim lanes and on not using computers to build them at first. Also, their stressing of using swim lanes to reduce waste is outstanding. However, their legend assumes a very tactical standpoint, similar to the first link. Again, not all swim lanes need to be so detailed. And I dislike the vertical swim lane example that they show here because our minds generally think of the passage of time from left-right, not up-down.

- https://www.mindtools.com/pages/article/newTMC_89.htm. This article teaches how to use swim lanes to fix inefficiencies, and when to use varying levels of detail with swim lanes.
- http://www.health.state.mn.us/divs/opi/qi/toolbox/swimlane.html. This provides good questions to ask when preparing swim lanes, as well as more possible items to add to your legend.
- https://www.chroniclegraphics.com/community/blog/best-practices-for-project-reporting-swimlanes-part-36/. This is a good commentary on swim lanes and why it's important to divide them into subcategories based on teams.
- Dan Roam, *Unfolding the Napkin: The Hands-On Method for Solving Complex Problems with Simple Pictures*, (New York: Penguin Group, 2009) 144-150. This book section is a great all-around introduction to swim lanes and the types of problems it can help solve.

Strategic Thinking

SAT: SWOT Analysis

Introduction. As 14Ns we are not just intelligence professionals, performing the daily collection, targeting and analysis required to provide knowledge to our commanders and operators. Most importantly, we are intelligence leaders. To be effective leaders, strategic thinking is imperative. As mentioned before, we will use the definition that Tom Rath and Barry Conchie use in their book *Strengths Based Leadership,* which is any kind of thinking about "what could be. [Strategic thinking is] constantly absorbing and analyzing information and helping the team to make better decisions. [Strategic thinking] continually [stretches] our thinking for the future."[86] 14Ns must provide the vision for their troops, so strategic thinking is a skill worth investing in. One SAT that can help us develop our strategic thinking skills is SWOT analysis.

Homework.

- **Minimum target:** Read FormSwift's SWOT Guide and use the worksheet they provide to perform one SWOT analysis for a new situation or opportunity at work. (*Estimated time: 1 hour)*
- **Suggested target:** After reading the SWOT Guide above, read the University of Kansas's SWOT guide, or one or both of the MindTools' SWOT guides. Then perform SWOT analysis for one additional professional and one personal endeavor. (*Estimated time: 2 hours)*
- **Additional exercises:**
    - **Teach it.** The best way to learn something new is to teach it. Teach SWOT analysis to your team or subordinate(s) and conduct a SWOT analysis together on your shop. (*Estimated time: 30 minutes to 1 hour)*
    - **Solicit feedback** on your personal SWOT analysis from those who know you well, perhaps a spouse, close friend, or your boss. Often, they have valuable and objective views that you will miss. (*Estimated time: 30 minutes to 1 hour)*
    - **Make it public.** Share the results of your SWOT analysis with your boss, team or social network. The more public it is the better, because this will force you to make a quality product. (*Estimated time: 30-45 minutes)*
- **Supplementary resources:**
    - http://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/swot-analysis/main
    - https://www.mindtools.com/pages/article/newTMC_05_1.htm
    - https://www.mindtools.com/pages/article/newTMC_05.htm

[86] Tom Rath & Barry Conchie, *Strengths Based Leadership: Great Leaders, Team, and Why People Follow* (New York: Gallup Press, 2008), 26.

BIOGRAPHY

Ryan John Barnum is Operations Flight Commander and an assistant professor of Aerospace Studies for Air Force Reserve Officer Training Corps (ROTC) Detachment 847 at Angelo State University, San Angelo, TX. As the Operations Flight Commander, Ryan is responsible for overseeing the training of, and providing mentorship for, 58 ROTC cadets as they prepare for active duty service in the United States Air Force. As an assistant professor of Aerospace Studies, Ryan teaches airpower history to the sophomore cadets and leadership studies to the junior cadets.

Ryan entered the Air Force in May of 2009 as a graduate of the University of Nevada Las Vegas and received his commission from ROTC. He has led intelligence support to C-130 units for the 317th Airlift Group at Dyess AFB, TX, and provided intelligence exercise support for aviation units and special operations forces at Joint Special Operations Command, Fort Bragg, NC. Prior to his current position, Ryan was an instructor and course developer at the 315th Training Squadron, Goodfellow AFB, TX. While there, he taught new intelligence officers and international officers from four different countries, and rewrote course curriculum.

EDUCATION
2009 Bachelor of Arts, Linguistics, University of Nevada, Las Vegas, Nevada
2009 Air and Space Basic Course, Maxwell AFB, Alabama
2011 Squadron Officer School (correspondence)
2015 Squadron Officer School (residence)

MILITARY ASSIGNMENTS
July 2010 – July 2013, 317th Operation Support Squadron, Dyess AFB, Texas
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